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Mahesh Kumar Barnwal

Mahesh Kumar Barnwal

As for the author, he is a successful candidate of CSE-1997 batch and currently working as an **S.S.P.** in Pondicherry. He has taught various subjects of General Studies and guided students preparing for interviews at various reputed civil services coaching institutes in Delhi with a more than 10 years experience in teaching. The author has left no stone unturned to make this book **Cosmos General Study One Liner : Volume-I** a highly comprehensive learning guide available. In this edition, all the stops have been pulled out to make the contents of the book easier to comprehend and more examination-oriented keeping in mind the frequent changes in the syllabus. This is bound to go a long way in helping candidates mastering the nitty-gritty of the subject and thus holding all the aces in an examination.

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GENERAL STUDIES
OBJECTIVE
Question Bank

(Answers with Explanations)

Based On
NCERT
VIth-XIIth

Useful for all Competitive Exams

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Mahesh Kumar Barnwal

Preface

Dear Students

It gives me an immense pleasure to present a compendium on General Studies, which aims to provide a vivid account of various subjects covered under General Studies ranging from Indian Polity, Indian and World Geography, Environment & Ecology, and Indian History.

The entire book is an encapsulation of One liners covering each aspect of the related topic under each subject, that has been derived from prescribed NCERTs in form of a gist. Major information bytes are provided in capsules to supplement the students with recent updates. The book is written in simple, explicit and lucid manner and presented in a tabulated format with bullets and flowcharts taking into consideration various dimensions and aspects covered by Union Public Service Commission, State Civil Services, SSC and other competitive exams. It fulfills the requirements of aspirants by providing a deep insight into the entire syllabus through a vivid description of valuable facts, information and subjective details as of the most updated issues.

I would like to offer my sincere thanks to those associates, students and friends who have encouraged me to write this book. I am thankful to Vishal Mishra, Ravneet Bedi, Sahil Atri and Sonam Veer Singh, Amulya Ratan, Shailendra Kumar Rastogi, Sushil Mishra, Priyanka Yadav and Rohit Yadav for feeding me with valuable inputs and providing feedbacks that helped me a lot through the entire journey of book writing. I would also like to thank Sonu Singh, Arvind Mukherji, Ajay Kumar, Kakoo, Roshan, Jitu, Sumit and Sachin for the layout and creative designing while drafting the book.

I apologize to my children Samridhi, Shivam and Shubham to whom I couldn't give proper time due to my engagements while writing the book. I am also thankful to my wife, Sudha whose love and encouragement motivated me to accomplish this task.

I sincerely hope that this book proves helpful to the aspirants appearing for various competitive exams since it has been meticulously written and drafted taking into consideration the current exam trend and various aspects they cover, still the constructive suggestions and feedbacks are always welcome.

Thank you

MAHESH KUMAR BARNWAL

(S.S.P., Puducherry Police Service)

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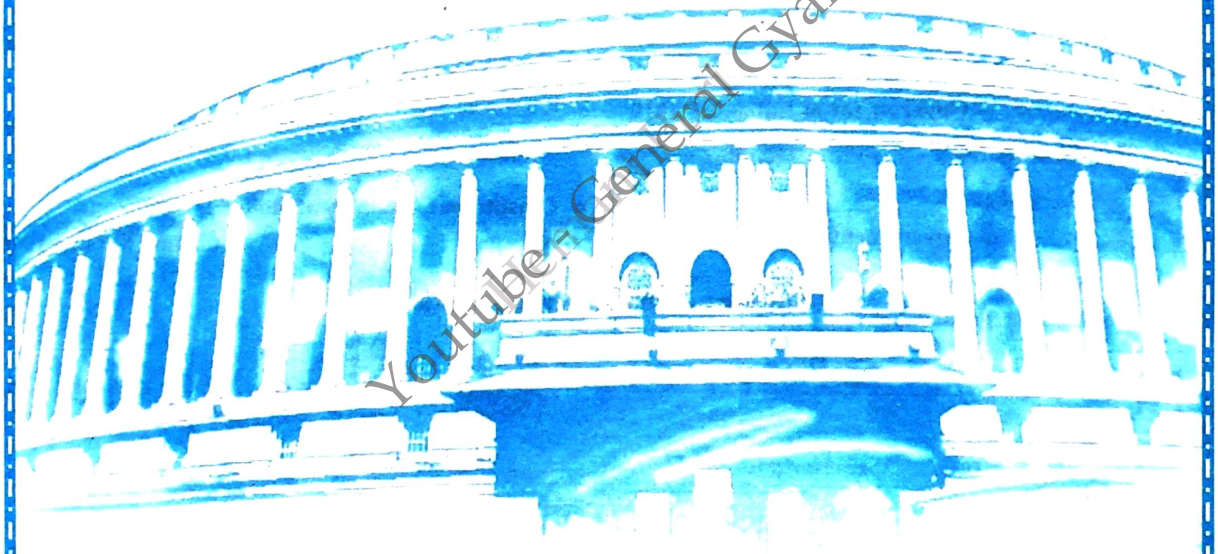
"The function of education is to teach one to think intensively and to think critically. Intelligence plus character – that is the goal of true education"

– Martin Luther King

Indian Polity



A

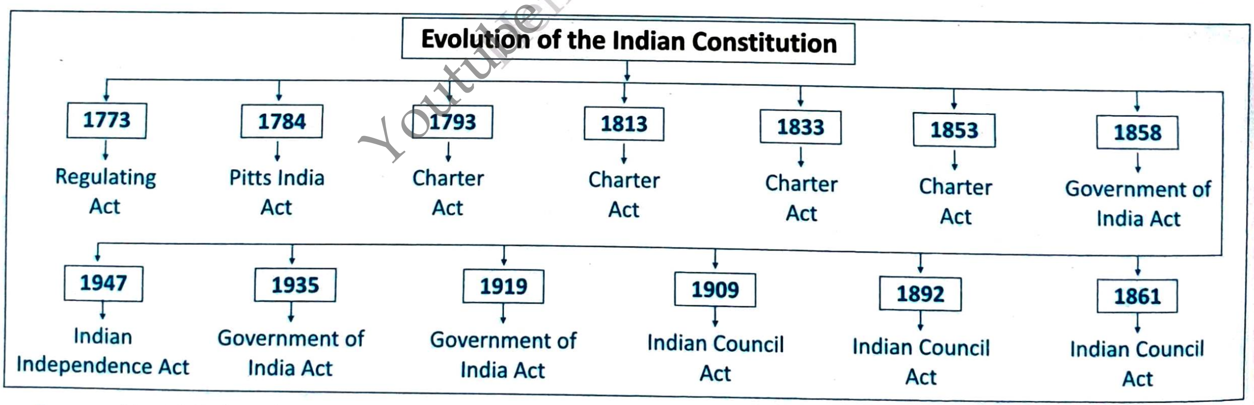
Indian Polity

Constitutional Development of India

- As per the **Regulating Act, 1773**, the Supreme Court of India was established at **- Calcutta** (1774)
- Which Act entitled Indians to be a part of administration **- Charter Act, 1833**
- Which Act allowed **Legislative Councils** to discuss Budget and ask questions to Executive? **- Indian Council Act, 1892**
- Which Act made Indian legislation Bicameral. **- Government of India Act, 1919**
- The power of President to promulgate **Ordinance** was originally inspired from which Act? **- Government of India Act, 1935**
- **Diarchy System** was introduced by which Act? **- Government of India Act, 1919**
- Which Act proposed the provision of **Federal government** during British era? **- Government of India Act, 1935**
- Which Act provisioned the establishment an **All India Federation** **Government of India Act, 1935**

Division of powers between **centre** and **states** as per constitution of India is based on **Government of India Act, 1935.**

- Drafting constitution of India by a **constituent Assembly** was proposed by? **Cripps Mission**
- **Constitutent Assembly of India** was organised under the provisions of? **- Cabinet Mission 1946**



Evolution of the Indian Constitution

1773
Regulating Act
1784
Pitts India Act
1793
Charter Act
1813
Charter Act
1833
Charter Act
1853
Charter Act
1858
Government of India Act
1861
Indian Council Act
1892
Indian Council Act
1909
Indian Council Act
1919
Government of India Act
1935
Government of India Act
1947
Indian Independence Act

- As per **cabinet Mission Plan**, election of the representatives from Provinces was made on the basis of? **- One representative per 10 lakh population**
- Election of members of constituent Assembly to make the constitution of India was done by? **- State Legislatures of British provinces**
- What was the purpose of constitution of **Simon Commission** (1927)? - To review **Government of India Act, 1919**
- When was the first meeting of the **constituent Assembly of India** held? **- 9th December 1946**

Sir B.N. Rao was the **Constitutional advisor** during **Drafting** of the **Indian Constitution.**

- Who was elected as the **Permanent Chairman** of constituent Assembly? **- Dr. Rajendra Prasad**
- When was the **Constitution of India** adopted? **- 26th November, 1949**

November 26 has been observed as the **Constitution Day** (since 2015) to commemorate the adoption of **Indian Constitution.**

- What was the entire duration for making of the constitution of India? - **2 years, 11 months & 18 days**
- When was the **Objective Resolution** introduced by **Pandit Nehru** in the **Constituent Assembly**? - **13th Dec., 1946**

Interim Government (1946)

S.No.	Head	Department
1.	**Jawaharlal Nehru**	Commonwealth, Foreign Affairs
2.	**Vallabh Bhai Patel**	Home & I & B
3.	**Rajendra Prasad**	Food and Agriculture
4.	**John Mathai**	Industry and Civil Supplies
5.	**Jagjivan Ram**	Labour
6.	**Sardar Baldev Singh**	Defence
7.	**Liaqat Ali Khan**	Finance
8.	**C. Rajagopalachari**	Education and Arts

- **Objective Resolution** introduced by **Pandit Nehru** was adopted in the constitution of India on? - **22nd January, 1947**
- How many sessions of **constituent Assembly** were conducted during the entire period of making of the **constitution of India**? - **11 sessions**
- The present form of **Indian flag** was adopted by the constitution of India on? - **22nd July 1947**

Constitution of India was **hand written** by **Prem Behari Narain Raizada** in a flowing **italic style** with **calligraphy**.

- When was the National **Anthem Jan-Gan-Man** adopted? - **24th January, 1950**
- When was the **Ashokan Pillar** adopted in the form of **National Emblem** of India? - **26th January, 1950**

Constitution Assembly

The first meeting of constituent Assembly was held on **9th December, 1946** with **Dr. Sacchidanand Sinha** elected as the chairman.

Dr. Rajendra Prasad was **elected** the **Permanent Chairman** on **11th December, 1946**. The objective **Resolution** introduced by **Pandit Nehru** on **13 December, 1946** was accepted on **22nd January, 1947**. Constitution of India was adopted on **26th November, 1949** it started functioning **26th January, 1950** onwards.

Sardar Vallabhbhai Patel was the chairman of **Advisory committee** of the **Constituent Assembly**.

- Who was the chairman of **Ad-hoc-committee** of **National Flag**? - **Dr. Rajendra Prasad**
- Who was the **chairman of Committee** on the functions of the **constituent Assembly**. - **G.V. Mavalankar**

The other **6 members** of **Drafting committee** chaired by **Dr. B. R. Ambedkar** included **N. Gopalaswami Ayyangar**. **Dr. K.M. Mushi**, **B. L. Mitre** (N.M. Rao replaced him later), **Alladi Krishna Swami Iyer**, Syed Md. Saadullah and Dr. P Khaitan (T. T Krishnamachari replaced him).

- When was a **Drafting committee** under the chairmanship of **Dr. B. R. Ambedkar** Constituted? - **29th August, 1947**
- **Dr. B. R. Ambedkar** in the **Constituent Assembly** was elected from? - **Bengal Presidency**
- The plan to **transfer power to the Indians** and provisions regarding **Balkanization** of India were laid down under? - **Mountbatten Plan**
- Which Act under British for the first time divided **legislative powers** between the **Centre** and the **Provinces**? - **Government of India Act, 1919**

Committees of the Constituent Assembly

22 committees were appointed by the Assembly

Major Committees	Chairman
• **Drafting Committee**	B.R. Ambedkar
• **Union Powers Committee**	Jawahar Lal Nehru
• **Provincial Constitution Committee**	Sardar Vallabh Bhai Patel
• **Steering Committee**	Rajendra Prasad
• **Committee on Fundamental Rights and Minorities**	Sardar Vallabh Bhai Patel
• **Union Constitution Committee**	Jawahar Lal Nehru
• **States Committee**	Pt. Jawahar Lal Nehru
• **Finance & Staff Committee**	Dr. Rajendra Prasad

58th Constitution Amendment Act, 1987 inserted **Article 394-A** in **Part 22** providing for an authoritative text in **Hindi language**.

Youtuber General Gyan

Various Provisions of the Constitution and their Sources

- **Preamble** of the Constitution was inspired from which country? - **France**
- Concept of **Parliamentary Privileges** enshrined in the constitution of India is based on the constitution of which country? - **Britain**
- **Fundamental Rights** incorporated in the constitution have been inspired from the constitution of which country? - **United States of America**

Due Process of Law has been borrowed from **Britian** while that of **Procedure Established by Law** from **Japan**.

- The provision of **Constitutional Amendment** has been adopted from which **Country**? - **South Africa**
- **Provisions** for **Emergency** have been adopted from which country? - **Weimar Germany**
- **Fundamental Rights** enshrined in **Part-III** of the **Indian Constitution** have been adopted from which country? - **USA** (Bill of Rights)
- The feature of **concurrent list** in the Indian constitution is taken from which country? - **Australia**
- **Indian Parliamentary model** of **Governance** is highly inspired from which country? - **Britian's Westminster Model**
- **Cabinet system** of Government was adopted from which country? - **Britain**

Indian constitution has adopted the concept of **prerogative writs** from **English common law**. Based on which Supreme Court under **Article 32** and **High Courts** under **Article 226** can issue a writ in case of **violation of a Fundamental Right**. Writs were first used to describe a **written command** of the King.

- **Independence of Judiciary** is maintained in the Indian polity through which political philosophy? - **Doctrine of Separation of Powers**
- Who was the political thinker who propounded the Doctrine of Separation of Powers? - **Montesquieu, an 18th century French social and political philosopher**

Important Sources of the Indian Constitution

Source/Country	Provisions borrowed
Ireland (Irish Constitution)	Method of election of President, Directive principles of state policy and nomination of Rajya Sabha members.
Government of India Act, 1935	Office of Governor, Federalism, Emergency, Judiciary, Public Service Commissions.
USA Constitution	Judiciary's Independence, Fundamental Rights, Judicial Review, Impeachment of President and removal of Judges of Supreme Court and High Court, Preamble.
Canada	Residuary Power to centre Federation with strong centre, Appointment of governor.
UK Constitution	Law making procedure, single citizenship, parliamentary government, cabinet system, bicameralism.
USSR Constitution	Fundamental duties, planning, (social economic and political) Ideals of Justice in preamble.
South African Constitution	Amendment of Constitution, Rajya Sabha elections.
French Constitution	Republic, ideals of Liberty, equality and fraternity.
Australian Constitution	Concurrent list, Joint sitting of the houses.
Weimar Constitution of Germany	Trade and Commerce, effects of emergency on fundamental rights.
Japanese Constitution	Procedure established by Law.

- In Indian polity, **Executive is made responsible** to the **Legislature** based on which political philosophy? - **System of Checks and Balances**

A major portion of the **Indian Constitution** is derived from **Government of India Act, 1935**.

Introduction to the Constitution of India

(I) Parts of the Indian Constitution

Parts of Indian Constitution and Related Articles

Parts	Subject	Related Articles
(1) I	The Union and Its Territory	1-4
(2) II	Citizenship	5-11
(3) III	Fundamental Rights	12-35
(4) IV	Directive Principles of State Policy	36-51
(4) IV A/IV A	Fundamental Duties	51A/51
(5) V	The Union	52-151
(6) VI	The States	152-237
(7) VII	Repealed by Section 29 and Schedule of the State Constitution (Seventh Amendment) Act, 1956 of Part B of the First Schedule	238 (Repealed)
(8) VIII	The Union Territories	239 -242
(9) IX	Panchayat	243&243O
(9) IXA	The Municipalities	243 P - 243 ZG
(9) IX B	The Cooperative Societies	243ZH - 243 ZT
(10) X	The Scheduled and Tribal Areas	244-244A
(11) XI	Relations Between the Union and the States	245 - 263
(12) XII	Finance, Property, Contracts and Suits	264 - 300A
(13) XIII	Trade, Commerce and Intercourse within the Territory of India	301 - 307
(14A) XIV	Services under the Union and the States	308 - 323
(14) XIVA	Tribunals	323A-323B
(15) XV	Elections	324-329A
(16) XVI	Special Provisions related to certain classes	330 - 342A
(17) XVII	Official Language	343 - 351A
(18) XVIII	Emergency Provisions	352 - 360
(19) XIX	Miscellaneous	361 - 367
(20) XX	Amendment of the Constitution	368
(21) XXI	Temporary, Transistional and Special Provisions	369 - 392
(22) XXII	Short Title, Commencement, Authoritative Text in Hindi and Repeals	393 - 395

Original Constitution had **22 Parts** and **395 Articles** which have extended to **25 Parts** and **470 Articles** of now.

(II) Schedules in the Indian Constitution

- What was the original number of **Schedules** enshrined in the **constitution of India**? **- 8**
- Provision regarding formation of new state in the **Indian Union** was made in which schedule? **- First Schedule**
- In which year was the first schedule in the **original 8 schedules** inserted? **- 1951** (9th Schedule)

First Schedule of the constitution of **India deals** with name of the States alongwith their **jurirdiction**.

- **Special provision** regarding administration and control of **scheduled areas** of various states have been made in? **- Fifth Schedule**
- Imposition of **tax** and **duties** by the government have been discussed in which Schedule? **- Seventh Schedule**
- Which Schedule inserted **constitutional safeguard** to the **State Land Reforms Act**? **- Ninth Schedule**

Tenth schedule of the **constitution** was added through **52nd Constitutional Amendment Act, 1985**. It was later amended by **91st Constitutional Amendment Act-2003**.

- How many schedules are there as of present in the **Indian Constitution**? **- 12**
- How many subjects are dealt with in the **12th schedule**? **- 18**

Schedules

Number	Subject Matter
First Schedule [Article 1 & 4]	1. Names of the States and their territorial jurisdiction. 2. Names of the Union Territories and their extent.
Second Schedule [Article 59(3), 65(3), 75(6), 97, 125, 148(3), 158(3), 164(5), 186, 221]	**Provisions relating to the emoluments, allowances, privileges and so on of–** 1. The President of India 2. The Governors of States 3. The Speaker and the Deputy Speaker of the Lok Sabha 4. The Chairman and the Deputy of Chairman the Rajya Sabha 5. The Speaker and the Deputy Speaker of the Legislative Assembly in the states 6. The Chairman and the Deputy Chairman of the Legislative Council in the states 7. The Judges of the Supreme Court 8. The Judges of the High Courts 9. The Comptroller and Auditor–General of India

Number	Subject
Third Schedule [Article 75(4), 84, 99, 124(6), 148(2), 164(3), 173, 188, 219]	**Forms of Oaths or Affirmations for–** 1. The Union ministers 2. The candidates for election to the Parliament 3. The members of Parliament 4. The judges of the Supreme Court 5. The Comptroller and Auditor-General of India 6. The State Ministers 7. The candidates for election to the State Legislature 8. The members of the state legislature 9. The judges of the High Courts
Fourth Schedule (Article [4(1), 80(2)]	Allocation of seats in the Rajya Sabha to the States and the Union Territories.
Fifth Schedule [Article 244(1)]	Provisions relating to the administration and control of Scheduled Areas and Scheduled Tribes.
Sixth Schedule [Art 244(2), 275(1)]	Provisions relating to the administration of tribal areas in the states of Assam, Meghalaya, Tripura and Mizoram.

10th Schedule of the **Indian Constitution** deals with (disqualification of MP & MLA on the ground of defection) through **Anti Defection Law**.

Number	Subject
Seventh Schedule [Article 246]	Division of powers between the **Union** and the **States** in terms of **List I** (Union List), **List II** (State List) and **List III** (Concurrent List). Presently, the Union List contains **100 subjects** (originally 97), the state list contains **61 subjects** (originally 66) and the concurrent list contains **52 subjects** (originally 47).
Eighth Schedule [Article 344(1), 351]	**Scheduled Languages** recognized by the **Constitution. Assamese, Bengali, Bodo, Dogri** (Dongri), **Gujarati, Hindi, Kannada, Kashmiri, Konkani, Mathili** (Maithili), **Malayalam, Manipuri, Marathi, Nepali, Odia, Punjabi, Sanskrit, Santhali, Sindhi, Tamil, Telugu** and **Urdu.**
Ninth Schedule [Article 31 B]	**Acts and Regulations** of the **State legislatures** dealing with **land reforms** and **abolition of the zamindari system** and of the Parliament dealing with other matters.
Tenth Schedule [Article 102(2), 191(2)]	Provisions relating to **disqualification of the members of Parliament** and **State Legislatures** on the ground of **defection.**
Eleventh Schedule [Art 243(G)]	Specifies the **powers, authority** and **responsibilities** of Panchayats. It has **29** subjects.
Twelfth Schedule [Art 243(W)]	Specifies the powers, authority and responsibilities of Municipalities. It has **18 subjects.**

- What is the number of subjects in the 11th **schedule**? **- 29**
- In which year was the most recent schedule inserted?
  - **1992** (Through 73rd and 74th Constitutional Amendment Acts Schedule 11 and 12)

Originally, it had **14 languages** but presently there are 22 **languages.**

- Which schedule deals with the **Land Reforms**? **- Schedule 9**
- **Tribal Advisory Councils** are mentioned in which Schedule? **- Schedule 5**
- **District Councils** are mentioned under which schedule? **- Schedule 6**

Sindhi was added by the **21st Amendment Act of 1967**; Konkani, Manipuri and Nepali were added by the **71st Amendment Act of 1992**; and Bodo, Dongri, Maithili and Santhali were added by the **92nd Amendment Act of 2003.**

- How many languages were incorporated originally under **Schedule 8**? **- 14**
- Which was the first language inserted through **21st Amendment Act 1967** in Schedule 8? **- Sindhi**
- **Nepali** was incorporated in eight schedule in which year? **- 1992** (71st Amendment Act)
- **Maithali** was incorporated in **Schedule 8** in which year? **- 2003**
- How many languages were incorporated under **71st Amendment Act 1992**? **- 3** (Konkani, Manipuri and Nepali)

Ninth schedule was added by the **1st Amendment** (1951) to protect the laws included in it from **judicial scrutiny** on the ground of **violation of Fundamental rights**. However, in **2007**, the **Supreme Court** ruled that the laws included in this schedule after **April 24, 1973**, are now open to **judicial review**.

- How many languages were inserted through **92nd Amendment Act, 2003**? **- 4** (Bodo, Dogri, Maithali and Santhali)

Santhali, an official language of **Jharkhand** and **West Bengal** and spoken in **India**, **Bangladesh** and **Nepal** became the **first Indian tribal language** in **2018** to get a **wikipedia edition** in it's own script.

- Seats of which house of the Indian Parliament are allocated in the **fourth Schedule** of the Indian Constitution? **- Rajya Sabha**
- Which State is allocated the **maximum number** of seats in Rajya Sabha as under **Schedule 4**? **- Uttar Pradesh** (31 seats)
- How many **Union Territories** are allocated seats in the Rajya Sabha as under **Schedule 4**? **- 3** (Jammu and Kashmir - 4 seats NCT of Delhi - 3 seats, Puducherry - 1 Seat)

English is **not a scheduled laguage** under **Schedule 8**, though it is an **official language** along with **Hindi**.

(III) Important Subjects of 7th Schedule

- Under which list of 7th Schedule **Uniform Civil code** is enshrined in the **constitution of India**?
  - Concurrent List

Population control and **Family Planning** apart from **criminal offences** are **subject matter** of **concurrent list**.

Initially Education was the subject matter of **state-list**. It was moved to **concurrent list** by **42nd Constitutional Amendment Act, 1976**.

- **Land Reforms** remain happens to be a subject matter of?
  - State list
- **Railway Police** remain a subject matter of? **- State-list**
- **Economic Planning** belongs to which list of the 7th Schedule? **- Concurrent List**
- **Agriculture** belongs to which list of the 7th Schedule?
  - State List
- **Panchayati Raj** belongs to which list of the 7th Schedule?
  - State List

Penal - Code is incorporated inder **List-III** of **seventh schedule** (Concurrent - list) of the constitution of India.

- **Marriage, Divorce** and **Adoption** belongs to which list of the 7th Schedule? **- List-III** (Concurrent - List)

Major Subjects of the Lists

Union List	**State List**	**Concurrent List**
• Defence, Naval military and air forces	• Public order and Police	• Criminal law and criminal procedure
• Arms, firearms, ammunition and explosives	• Local self government	• Marriage and divorce
• Atomic energy and mineral resources	• Public health and sanitation	• Transfer of Property other than agricultural land
• Central Bureau of Intelligence and investigation	• Pilgrimages inside India	• Bankruptcy and insolvency
• Preventive detention	• Fisheries	• Prevention of cruelty to animals
• Foreign Affairs	• Libraries and museums	• Forests
• United Nations Organisation	• Markets and fairs	• goods
• Citizenship, naturalization and Aliens	• Prevention of animal diseases and veterinary training	• Newspapers, books and printing presses
• Railway	• Agricultural income	• Economic and social planning
• Pilgrimage in places outside India	• Betting and gambling	• Population control and family planning
• Shipping and navigation on inland waterways	• Relief of the disabled and unemployable	• Trade unions
• Post and Telegraph	• Land revenue	• Social security and social insurance
• Currency coinage and legal tender	• Taxes on lands and buildings	• Education
• Inter state trade and Commerce	• Taxes on advertisements	• Legal, Medical and other professions
• Banking and Insurance Stock exchanges and future markets	• Taxes on consumption and sale of electricity	• Charities and charitable institutions
• Census	• Tolls	• Price control
• Survey of India	• Capitation taxes	• Weights and measurements

At present subject - matters belonging to Union list, state-list and that of concurrent list stood 100, 61 and 52 respectively.

Nature and Features of the Indian Constitution

- **Nomenclatue of nation** have been made in the constitution as?
  - India i.e. Bharat
- Which form of governance have been **adopted** by the **Indian Constitution**?
  - Parliamentary

Legislative enjoys absolute control over **Executive** in a **Parliamentary form of Government.**

- The basic constituent of **Presidential form of Government** is?
  - Executive (not to be a part of Legislature)
- The basic difference between **Parliamentary form of government** in **India** and that of **Britain** is?
  - Judicial Review
- **Constitution of India** is **federal** in nature. It refers to?
  - Distribution of powers between centre and the states (Schedule 7)

Major Features of Indian Constitution

- Lengthiest written Constitution of the world
- Derieved from various constitutions and GOI, 1935
- Separation of Power combined with Cheks and Balances
- Partially Rigid & Patially Flexible
- Parliamentary from of Government

- India is a **federation** or a **Confederation**?
  - Federation
- What is meant by **Partially rigid** and **Partially flexible** nature of Indian Constitution?
  - It provides for amendment by both simple and special majority.
- What is meant by **Separation of Powers**?
  - Separation of Judiciary from the Executive
- What is meant by **Checks and Balances**?
  - Executive responsible to the Legislature
- What exactly is meant by **Judicial Supremacy**?
  - Supreme Court as the Guardian of the Constitution and the final authority to interpret it.
- Who called the **Directive Policy** and **Fundamental Rights** the **conscience of Constitution**?
  - Granville Austin
- When was the **National Anthem Jan-Gan-Man** first sung?
  - Calcutta Session (1911)

Unitary Features of Indian Constitution

- All India Services
- Strong Centre
- Single Constitution
- Destructible States with a in-destructible Union
- Single Citizenship
- Flexible Constitution
- Integrated Judiciary
- Appointment of Governor

Federal Features of Indian Constitution

- Judicial Independence
- Distribution of powers between Centre and States
- Rigidity of the Constitution
- Supremacy of the Constitution
- Written Constitution

- The standard period for **National Anthem** stands for?
  - 52 seconds

Owing to the **complexities** and **Jargons** in the constitution of India, it is often termed **Lawyer's Paradise**.

- Who referred to the Constitution of India as a **blend of rigidity and flexibility**?
  - K. C. Wheare
- What is the basic reason behind the **vastness of constitution**?
  - Single constitution for both Union and States
- Makers of the constitution accorded less importance to the **interest** and **valour** of Minorities. The statement belongs to?
  - Ivor Jennings
- Who made the statement that India happens to be a **Quasi - federal state**?
  - K. C. Wheare

Federation	**Confederation**
• **Federation** is **close association** between **two** or **more units** or **states**	**Confederation** is a **loose association** between **two** or **more states.**
• In **Federation**, States normally **do not have right to secede** like in **India** and **Pakistan**	In **Confederation**, States have **right to secede** e.g. **CIS, USSR** (erstwhile)

- Who termed **Indian Union** as a **cooperative federation**?
  - Granville Austin

There have been **115 Constitutional Amendments** in the **Indian Constitution** till date.

Preamble

Preamble

WE, THE PEOPLE OF INDIA, having solemnly resolved to constitute India into a **SOVEREIGN, SOCIALIST SECULAR DEMOCRATIC REPUBLIC** and to secure to all its **Citizens** :

JUSTICE, **social**, **economic**, **political**;

LIBERTY of **thought**, **expression**, **belief**, **faith** and **worship**;

EQUALITY of **status** and of **opportunity**, and to promote among them all;

FRATERNITY assuring the **dignity of the individual** and the **unity** and **integrity** of the Nation :

IN OUR CONSTITUENT ASSEMBLY this **twenty-sixth day** of **November, 1949** do **HEREBY ADOPT, ENACT AND GIVE TO OURSELVES THIS CONSTITUTION.**

- When was the **Objective Resolution** introduced in the **constitutent Assembly**? **- 13th December, 1946**
- Which part of the **constitution of India** declares **India as a Secular state**? **- Preamble of the constitution**

Sources of Preamble

Country	Sources
USSR	Ideals of Justice
French Constitution	Republic and the ideals of Liberty, equality and fraternity
American Constitution	Preamble

- The exact meaning of **Secular** in **Indian** context
  - Equal respect for all religions and no specific association of the State with any religion

Preamble

- **Nature of State** — Sovereign, Socialist, Secular Democratic, Republic
- **Source of Authority** — We, the People
- **Objectives of Constitution** — Justice, liberty, equality, fraternity, unity and integrity
- **Date of Adoption of the Indian Constitution** — 26 November 1949

- India as a **Republic** refers to?
  - No Hereditary Ruler in India (Absence of Monarchy)

- How many types of Justice is enshrined in the **Preamble**?
  - 3 (Social, Economic and Political)
- India adopted for which form of **Democracy**?
  - Representative Parliamentary Democracy (RPD)
- Preamble was amended in which year?
  - 1976 (42nd Amendment Act)
- Which words were inserted through the **42nd Amendment Act** in Preamble? **- Socialist, Secular and Integrity**
- Who referred **Preamble as the identity card to the Constitution**? **-N.A. Palkhiwala**
- What is meant by **Sovereignty** in Indian context?
  - Independent authority of State (with no influence of any foreign country)
- The term **Equality** mentioned in the **Preamble** are supplemented by which articles of the Indian Constitution?
  -Article 14-18 (Part III, Fundamental Rights) **Right to Equality and Article 325-326** (Adult Franchise) **Article 39** (DPSP)
- What collectively refers to as **Distributive Justice**?
  - Social and Economic Justice [Articles 15, 16, 39(d), 38(2), 39(b) and 39(c)]
- What form of socialism was adopted in India in **1976** via amendment of the Preamble? **- Democratic Socialism**

Communist form of **Socialism/State socialism** refers to **nationalization of means of production** and their **distribution** by the **abolition of private property**; while **Democratic socialism** refers to a **mixed economy** where both **public** and **private sectors** coexist side by side. **Democratic socialism** aims to end **poverty**, **ignorance**, **disease**, and **inequality of opportunity**. It is inclined towards **Gandhian socialism** rather **Marxist**.

Supreme Court Judgements related to Preamble

- **Berubari Union Case (1960)** — Preamble is not a part of the Indian Constitution
- **Keshavananda Bharti Case (1973)** — Preamble is a part of the Indian Constitution
- **LIC India Case (1995)** — Preamble is an **integral part** of the Indian Constitution

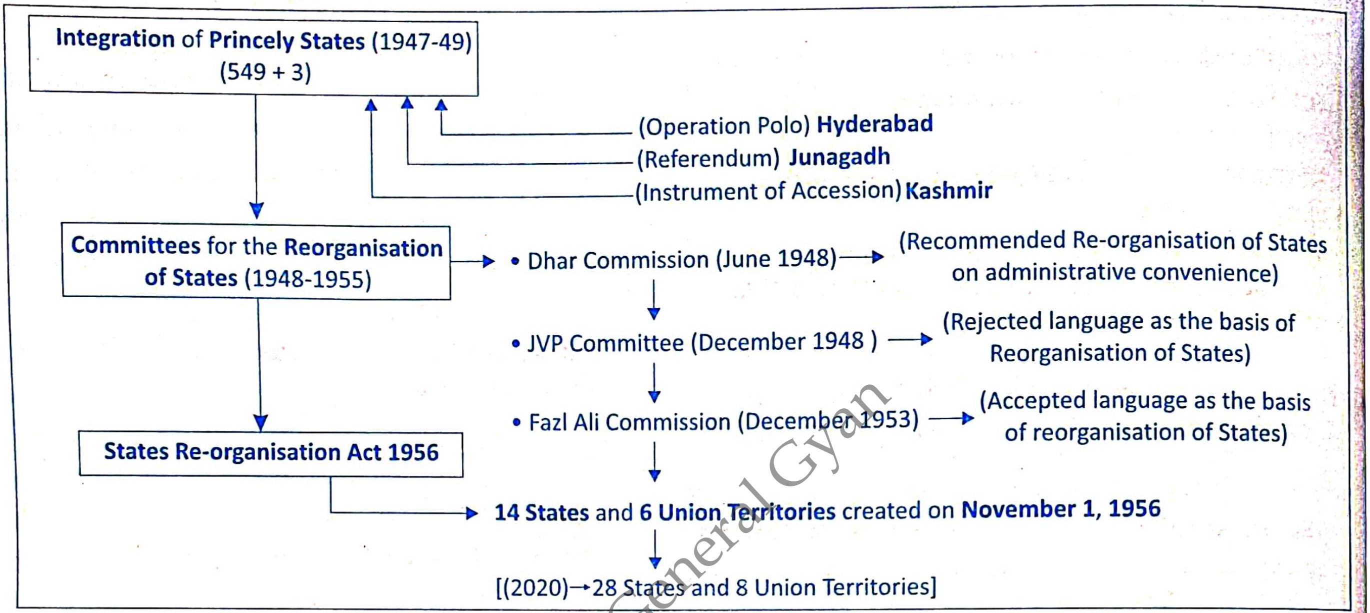
In **Golaknath vs State of Punjab Case, Justice M. Hiddayatulla** referred **Preamble** as the **soul of Constitution.**

Union and Territory

Indian Territory (Article 1)

- All States Territories
- Union Territories
- Territories that will be acquired in future

- The authority to include any state inside **Indian Union** is vested in **- Parliament**
- India is a **Union** or a **federation**? **- Article 1 : India shall be Union of States**



Integration of **Princely States** (1947-49) (549 + 3)

(Operation Polo) **Hyderabad**

(Referendum) **Junagadh**

(Instrument of Accession) **Kashmir**

Committees for the **Reorganisation of States** (1948-1955)

- Dhar Commission (June 1948) → (Recommended Re-organisation of States on administrative convenience)
- JVP Committee (December 1948) → (Rejected language as the basis of Reorganisation of States)
- Fazl Ali Commission (December 1953) → (Accepted language as the basis of reorganisation of States)

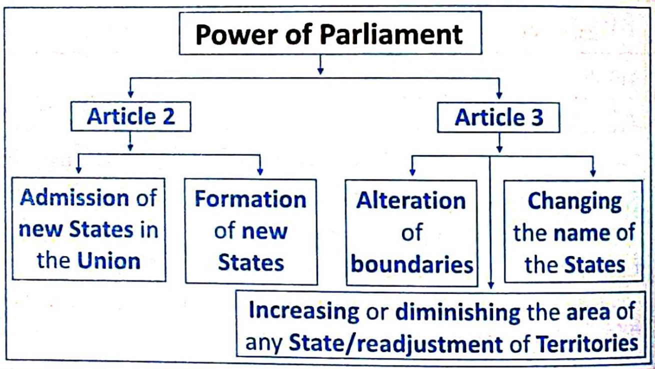
States Re-organisation Act 1956

→ **14 States** and **6 Union Territories** created on **November 1, 1956**

[(2020)→28 States and 8 Union Territories]

Articles related to Union and its Territory

Art.	Subjects
1.	Name and territory of the Union.
2.	Admission or establishment of new States.
3.	Formation of new States and alteration of areas, boundaries or names of existing States.
4.	Laws made under articles 2 and 3 to provide for the amendment of the First and the Fourth Schedules and supplemental, incidental and consequential matters.



Power of Parliament

Article 2

- **Admission** of **new States** in the Union
- **Formation** of new **States**

Article 3

- **Alteration** of **boundaries**
- **Changing** the name of the States
- **Increasing** or **diminishing** the area of any **State/readjustment** of **Territories**

7th Constitutional Amendment Act, 1956 or **States Reorganisation Act, 1956** was passed to give effect to **Fazl Ali Commission** recommendations, with some modifications.

- How many **states** and **UTs** are there in India currently? **- 28 states and 8 Union Territories**
- Maximum **number of seats** reserved for **Union Territories** in **Lok Sabha** are? **- 20**
- When **Jammu and Kashmir** got bifurcated into two separate **Union Territories**? **- 31st October, 2019**
- **Fazl Ali Commission** related to the **Reorganisation states** was **constituted** in which year? **- 1953**
- Which was the **first state** to be formed on the basis of language? **- Andhra Pradesh**
- How many **states** and **UTs** were formed by the **State Reorganisation Commission** on **1st November,1956**? **- 14 states and 6 UTS**
- In which year **Sikkim** was incorporated as a **State**? **- 36th Constitutional Amendment Act, 1975**

Article 239 A and **239 AA** deal with **special provisions** related to **Union Territories**.

Citizenship

Citizenship acquisition under Citizenship Act, 1955

- By Birth
- By Descent
- By Incorporation of Territory
- By Naturalisation
- By Registration

♦ **Constitution of India** offers which kind of citizenship?
- Single Citizenship

♦ **Citizenship** of a person can be **terminated** if he/she resides **outside India** for a continuous period of how many years?
- More than 7 years

♦ **Non-Resident Indian** (NRI) day in observed
- Every two years (9th January)

♦ **L.M. Singhvi** committee is related to? **- Dual citizenship**

♦ Concept of **Single citizenship** has been borrowed from which country? **- Britain**

♦ **Persons of India origin** (PIO) cannot purchase?
- Agricultural land

♦ **Indian Constitution** provides for **Citizenship** based on which **Principle**? **- Jus Soli** (on the basis of place of birth)

♦ Assam Accord of **1985** is associated with? **- Citizenship**

♦ **National Register of Citizens** was first prepared in which year? **- 1951**

♦ The database under **National Population Register** is maintained by which authority?
- Registrar General of India and Census Commissioner of India, Ministry of Home Affairs

♦ Which was the **first Indian State** where updation of **NRC** was done? **- Assam**

Citizenship

Art.	Subject
5.	Citizenship at the commencement of the Constitution.
6.	Rights of citizenship of certain persons who have migrated to India from Pakistan.
7.	Rights of citizenship of certain migrants to Pakistan.
8.	Rights of citizenship of certain persons of Indian origin residing outside India.
9.	Persons voluntarily acquiring citizenship of a foreign State not to be citizens.
10.	Continuance of the rights of citizenship.
11.	Parliament to regulate the right of citizenship by law.

Dual Citizenship Law in India

In **2004** by an **amendment** to the **Citizenship Act**, the facility of **Overseas Citizenship of India** (OCI) was made available to **PIOs** in **16 specialised countries**. Later it was extended to **PIO's** of any country (except Pakistan and Bangladesh) that allows **dual citizenship**, by **Citizenship** (Amendment) **Act, 2005**.

♦ A **usual resident**, registered under **NPR** is someone who is residing in a local area for what duration?
- 6 or more months

♦ What is the major requirement for someone applying for citizenship under recent **CAA 2019**?
- He may belong to a religious persecuted minority from Afganistan, Bangladesh or Pakistan

♦ Which minorities are included for citizenship under **CAA 2019**?
- Hindus, Buddists, Sikhs, Jains, Parsis and Christians

Indians in Foreign Countries

NRI

- These are simply **Indian Citizens** living **abroad**.
- Hold **Indian Passport**.
- Have **all rights** of **Indian Citizens**.

PIO

- Persons of **Indian origin scheme** was launched in **1999**. **PIO card** is given to any **person** who can prove their **India origin/descent** upto **three generations**.
- Generally valid for **15 years**.

OCI

- **Overseas citizen of India scheme** came into existence during **2006**, **Pravasi Bhartiya Diwas**.
- They are **more recent migrants** who have taken **citizenship** of **another country**.

On **January 9, 2015**, **PIO** and **OCI** schemes were merged.

Fundamental Rights

- Which part of the Constitution deals with **Fundamental Rights?** **- Part 3** (Article 12-35)
- Who has been vested with the power to ensure the enforcement of **Fundamental Rights** through the constitution? **- Supreme Court and High Courts**
- **Right to Equality** has been enshrined in the constitution under which **Articles?** **- Article 14 - 18**
- In matter of **public employment**, which article provides for **Equality of opportunity** to all Indian Citizens? **- Article 16 (1) & 16 (2)**
- Provision regarding **untoucnability** have been made under? **- Article - 17**
- **Article - 18** is related to? **- Abolition of titles**
- Under which **Article** it has been provided that an a person accussed of any crime shall not be forced to become a witness against himself (self incrimination)? **- Article - 20 (c)**
- Which article provides for provisions right **against exploitation of children?** **- Article - 24**

Budhism, **Jainism** and **Sikkism** have been included under the term **Hindu** mentioned under **Article - 25** of the **constitution of India.**

- **Right to property** is currently regarded as? **- Legal Right/Constitutional Right**

Right to Information happens to be a **Fundamental Right** provided under **Right to Information Act 2005.**

- Which article provides provisions for **reservation** of **Economically weaker sections** (EWS)? **- Article 15(6) & 16 (6)**
- Which Articles cannot be suspended during **Emergency** (Article 352)? **- Article 20 and 21 Right to life and Personal liberty** (Article 21)
- Why are the rights mentioned under **Part 3** of the Constitution referred as **fundamental rights?** **- Because they are justiciable in nature**
- In which year was the **Right to Property** under **Article 31** removed as a fundamental right making it a **legal right?** **- 1978** (44th Constitutional Amendment Act)
- What is meant by the **justiciable nature** of fundamental rights? **- One can move to court for enforcement of these rights under Article 32** (to Supreme Court) **and under Article 226** (to High Courts)
- In which year Supreme Court declared that a Constitutional **Amendment** can be **challenged** on grounds of **violation of basic structure** of the constitution? **- 1973** (Keshavanand Bharti case)
- Which case provided for the **Doctrine of Basic structure** of the constitution? **- Keshavanand Bharti case, 1973**
- Which article under fundamental rights provides for **Judicial review** of all the legislations? **- Article 13**
- The notion of **Judicial review** is taken from which country? **- Constitution of USA**
- What exactly is meant by **equality before law** as under **Article 14?** **- All persons are equal in the eyes of law**
- What is meant by **Equal protection of law?** **- Equal treatment of all in equal circumstances and unequals to be treated unequally**
- Who gave the principles related to **Rule of Law?** **- A.V Dicey**
- Which article of the Indian Constitution provides for **Prohibition of discrimination** by state and **individual** against any Citizen on certain grounds **- Article 15**
- Under which article the State has the power to make **special provisions for women and children** as exceptions to **Prohibition of Discrimination?** **- Article 15 (3)**
- Which article empowers the state to make provisions for reservation in matters of **promotion of Scheduled Castes and Scheduled Tribes?** **- Article 16 (4) A** (77th Constitutional Amendment Act 1995)
- **Freedom of Press** is implicit under which fundamental right? **- Article 19** (Right to freedom of speech and expression)

19 Fundamental Rights were incorporated in **Nehru Report** (1928) **Motilal Nehru.**

- The **Protection of Civil Rights Act 1955** was passed by Parliament to ensure which fundamental right ?
  - Article 17 (Abolition of untouchability)
- **Right to form Cooperative Societies** became a fundamental right in which year?
  - 2011 (97th Constitutional Amendment Act)
- **Freedom of speech and expression** as provided under **Article 19** is subjected to which reasonable restrictions ?
  - Sovereignty and integrity of India, security of state, friendly relations with foreign States, public order and decency
- **Inner line permit system** currently in force in states Of **Arunachal Pradesh**, **Nagaland** and **Mizoram** is an exception to which fundamental right?
  - Article 19 (1) d & e (Freedom to move freely throughout the territory of India and freedom to reside and settle in any part of India)
- **Right to Information** was made a fundamental right, implicit under which article? **- Article 19**
- Which article of the Fundamental Rights prohibits **double jeopardy/double prosecution**? **- Article 20 (3)**
- **Right to livelihood** and **environment** is implicit under which article of fundamental rights?
  - Article 21 (Protection of life and personal liberty)
- **Right to privacy** is implicit under which fundamental right?
  - Right to life and personal liberty, Article 21
- In which case the Supreme Court of India emphasized on the notion of **Due process of law** in India ?
  - Maneka Gandhi case vs Union of India 1978 (A person can be deprived from his life and liberty by procedure established by law or provided that such a procedure is reasonable fair and just)
- **Right to education** was inserted as a **fundamental right** in **Part 3** in which year?
  - 2002 (86th Constitutional Amendment Act 2002)
- A person needs to be produced before the nearest magistrate within what time duration in case of an **arbitrary** arrest? **- 24 hours**
- In case of **preventive detention** a person arrested can be detained for a maximum duration of? **- 3-12 months**
- What exactly is meant by **preventive detention?**
  - Detention of a person without trial, to stop a person from committing any offence or crime
- **Immoral traffic in women and children** is prohibited through which fundamental right?
  - Article 23, Prohibition of traffic in human being and forced labour
- Which legislations were enacted as per the provisions of **Article 23**? **- Immoral Traffic** (Prevention) **Act 1956 and Bonded Labour System (Abolition) act 1976**
- **Freedom of conscience** is provided under which fundamental right? **- Article 25**
- **Educational institutions** with regard to freedom of imparting **religious instructions** are categorised under which Article ? **- Article 28**
- **Article 29** provides for how many types of **minorities?**
  - 2 (Religious minorities and Linguistic minorities)
- Which article was referred as **heart and soul of the Constitution** by **Dr. B. R. Ambedkar?**
  - Article 32, Right to Constitutional Remedies for enforcement of Fundamental Rights
- Which court has a **wider scope** in **case** of issuing writs?
  - High Courts
- The writ of **Habeas Corpus** can be issued against whom ?
  - State, executive or an individual
- **Writ of Mandamus** can be issued against which body?
  - Against executive and inferior judicial bodies
- For how much duration can **section 144** remain in force?
  - Not more than 2 months
- Which writ can be issued only against **Judicial** and **Quasi judicial** bodies? **- Writ of Prohibition and Certiorari**
- Which writ ensures the legality of the qualification of a person holding an office ? **- Quo Warranto**

Supreme Court can issue writs only in case of violation of **Fundamental Right**, while **High Courts** can issue writs for **Fundamental** or **Constitutional rights violation**.

- Which article **restricts the fundamental rights** enjoyed by members of **armed forces** and **police forces** or **intelligence organisations**? - **Article 33**
- Which article lays down **restrictions on fundamental rights** when **Martial Law** is in force in any area? - **Article 34**
- **Section 144** can be imposed by which authority? - **District Magistrate**
- Which writ cannot be issued against a **private individual** and **President** and **Governor** of a state? - **Writ of Mandamus**

Part III: Articles under Fundamental Rights

Article 12	Definition of **state**
Article 13	**Laws inconsistent** to **fundamental rights**

Right to Equality (Article 14 - 18)

Article 14	**Equality** before law
Article 15	**Prohibition** of **discrimination** on ground of religion, race, caste , sex or place of birth
Article 16	**Equality** of **opportunity** in matters of public employment
Article 17	Abolition of **untouchability**
Article 18	Abolition of **titles**

Right to Freedom (Article 19 - 22)

Article 19	**Freedom of speech** and **expression**
Article 20	Protection in respect of **conviction of offences**
Article 21	Protection of **life** and **personal liberty**
Articel 21A	Right to **elementary education**
Article 22	Protection against **arrest** and **detention** in certain cases

Right against Exploitation (Article 23 - 24)

Articel 23	Prohibition of **traffic** in **human being** & forced labour
Article 24	Prohibition of **employment of children** in factories, etc

Right to Freedom of Religion (Article 25 - 28)

Article 25	Freedom of **conscience** and **free profession, practice** and **propagation** of religion
Article 26	Freedom to manage **religious affairs**
Article 27	Freedom from **payment of taxes** for **promotion of any religion**
Article 28	Freedom from **attending any religious instructions** or **worship** in certain educational institutions

Cultural & Educational Rights (Article 29-30)

Article 29	Protection of **interests** of **minorities**
Article 30	**Rights of minorities** to **establish** and **administer educational institutions**

Right to Constitutional Remedies (Article 32)

Article 32	**Remedies** for **enforcement** of **fundamental rights** conferred by this part

Exceptions to Fundamental Rights

Article 31 A	A law for **agrarian reform** or for **acquisition** of **estates**, etc. cannot be invalidated if it contravenes **Article 14** and **19**.
Article 31 B	This articles provides complete exception to fundamental rights i.e. Law put under **9th Schedule** which is read with **Article 31B cannot be invalidated** on the ground of **violation of fundamental rights**.
Article 31 C	Laws made for **giving effect** to certain **directive principles cannot be invalidated** on ground on **contravention** of **Article 14** and **19**.

Implicit Rights under Freedom of Speech and Expression

- Right to **propagate one's views** and **views of others**
- Freedom of **Press**
- Freedom of **Commercial advertisements**
- Right against **tapping** of **telephonic conversation**
- Right to **telecast/broadcast** (no monopoly of Government)
- Right against **bundh** called by a **political party** or **organisation**
- Right to know about **government activities** and **Right to Information**
- Freedom of Silence
- **Right to demonstrate** but **not** the **Right to Strike**

Criminal laws cannot be enacted retrospectively under **Article 20(1)** while **Civil laws** can be.

Directive Principles of State Policy

- Objective of incorporation of **Directive Principles** of **State Policy** in the constitution of India to ensure?
  - Establishment of Socio Economic Democracy
- Assumption regarding **establishment** of a **welfare state** have been made under?
  - Directive Principles of State Policy (Part - IV)
- Which principle provides that Directive principles are not in conflict with fundamental rights but **complementary** to them? **- Principle of Harmonious construction**

> **Directive Principle of state** is a form of cheque that can be withdrawn at the care of **Bank.** **- K. T. Shah**

- Which article of Directive principles provide for Free Legal Aid? **- Article 39 A** (42nd amendment act 1976)
- What is exactly meant by **non justiciable nature** of Directive Principles of State Policy?
  - One cannot move to court in case of non implementation of DPSPs

> Directive principles are **moral precepts** for the authorities of the state – **B. N. Ray**.

- **Equal distribution** of **material resources** and **prevention** of **concentration of wealth** and **means of production** are proposed under which directive principle?**- Article 39**
- Which DPSP proposes for **public assistance** in case of **unemployment**, **old age**, **sickness** or **disablement**?
  - Article 41
- Directive to prohibit the **slaughter of cows** and other milch and **draught animals** is provided under which article of DPSP? **- Article 48**
- Which is the latest insertion/addition to the Directive Principles of State Policy?
  - Promotion of formation and functioning of cooperative societies Article 43 B (97th Amendment Act 2011)
- **73rd Amendment Act 1992**, implemented which Directive?
  - Organisation of Village Panchayats, Article 40
- **Environmental Protection Act**, **Wildlife Protection Act** are in lines with which Directive of Part 4?
  - Article 48 A, Protection and improvement of environment and safeguarding of forests and wildlife

Directive Principles of State Policy Part IV (Article 36 - 51)

Article 36	Definition
Article 37	Application of principles contained in this part
Article 38	State to secure a social order for the promotion of welfare of the people
Article 39	Certain principles of policy to be followed by state
Article 39A	Equal justice and free legal aid
Article 40	Organisation of village panchayats
Article 41	Right to work, education and to public assistance in certain cases
Article 42	Provision for just and humane conditions of work and maternity relief
Article 43	Living wage, etc, for workers
Article 43A	Participation of workers in management of industries
Article 44	Uniform civil code
Article 45	Provision for free and compulsory education for childrens below age of 6 years
Article 46	Promotion of educational and economic interests of Scheduled Castes, Scheduled Tribes and other weaker sections
Article 47	Duty of the state to raise the level of nutrition and the standard of living and to improve the public health
Article 48	Organisation of agriculture and animal husbandry
Article 48A	Protection and improvement of environment and safeguarding of forests and wildlife
Article 49	Protection of monuments, places and objects of national importance
Article 50	Separation of judiciary from executive
Article 51	Promotion of international peace and security

Fundamental Rights and **DPSPs** have a common origin in **Sapru Report** of **1945** (Sir Tej Bahadur Sapru).

Fundamental Duties

- Inspired by which **constitution, Fundamental Duties** were incorporated in the Indian Constitution?

  - Union of Soviet Socialist Republics (USSR)

- Which part of Constitution provide for **Fundamental Duties**?

  - Part IV A

Swaran Singh committee recommended addition of **eight fundamental Duties** to the **Constitution**. However a total of **10 Fundamental Right** were incorporated **42th constitutional Amendment Act, 1976**. **11th Duty** was added by **86th Constitutional Amendment Act**.

- **11th Fundamental Duty** has been added to the constitution by which amendment?

  - 86th Constitutional Amendent Act (2002)

- **Fundamental Duties** are broadly classified under

  - Moral Duty and Citizens Duty

- Accordingly priority to the **Indian national freedom** up to high spirit has been categorised under? **- Moral Duty**

Environmental Protection and **wildlife conservation** are among the **Fundamental Duties**.

- **Fundamental Duties** are mainly imposed on? **- Citizens**

- Abolition of the derogatory practices for the **sake of women respect** have been included under **Fundamental Duties** under? **- Article 51 A (5)**

Fundamental Duties have references from erstwhile **USSR's** and **Japanese Constitution**. Japanese Constitution is the only **democratic constitution** in the **world** which contains **duties of citizens**.

- Which fundamental duty is enshrined with the spirit of removing superstitions?

  - To value the scientific temper, Humanism and spirit of inquiry

The **inclusion** of **Fundamental Duties** brought **Indian Constitution** at par with **Article 29(1)** of the **Universal Declaration** of **Human Rights**

IV A Fundamental Duties of Indian Citizens (11)

1. To abide by the constitution and respect its ideals, the National Flag and National Anthern.
2. To follow the hoble ideals and institutions inspiring our freedom struggle.
3. To uphold and protect Sovereighty and Unity and Integrity of India.
4. To defend the country and Render National Service when required.
5. Promote harmony and the spirit of common brotherhood amongst all the people of India transcending religious, linguistic and regional or sectional diversities and to renounce practices derogatory to the dignity of women
6. To value and preserve the rich herilage of our composite - culture.
7. To protect and improve the natural enviroment including forests, lakes, wildlife and rivers etc, to have compassion for all livily creatures.
8. To develop scientific temper humanism and the spirit of inquiry and reform.
9. To safequard Public property and to abjure violence and
10. To strive towards excellenc in all spheres of individual and collective activity.
11. To provide opportunities for education to his child or as the care may be ward between the age of six and fourteen years.

11th Duty was added by the **86th Constitutional Amendment Act, 2002**.

- Is **Right/Duty to Vote** incorporated as a Fundamental Duty?

  - No

- What is the nature of Fundamental Duties?

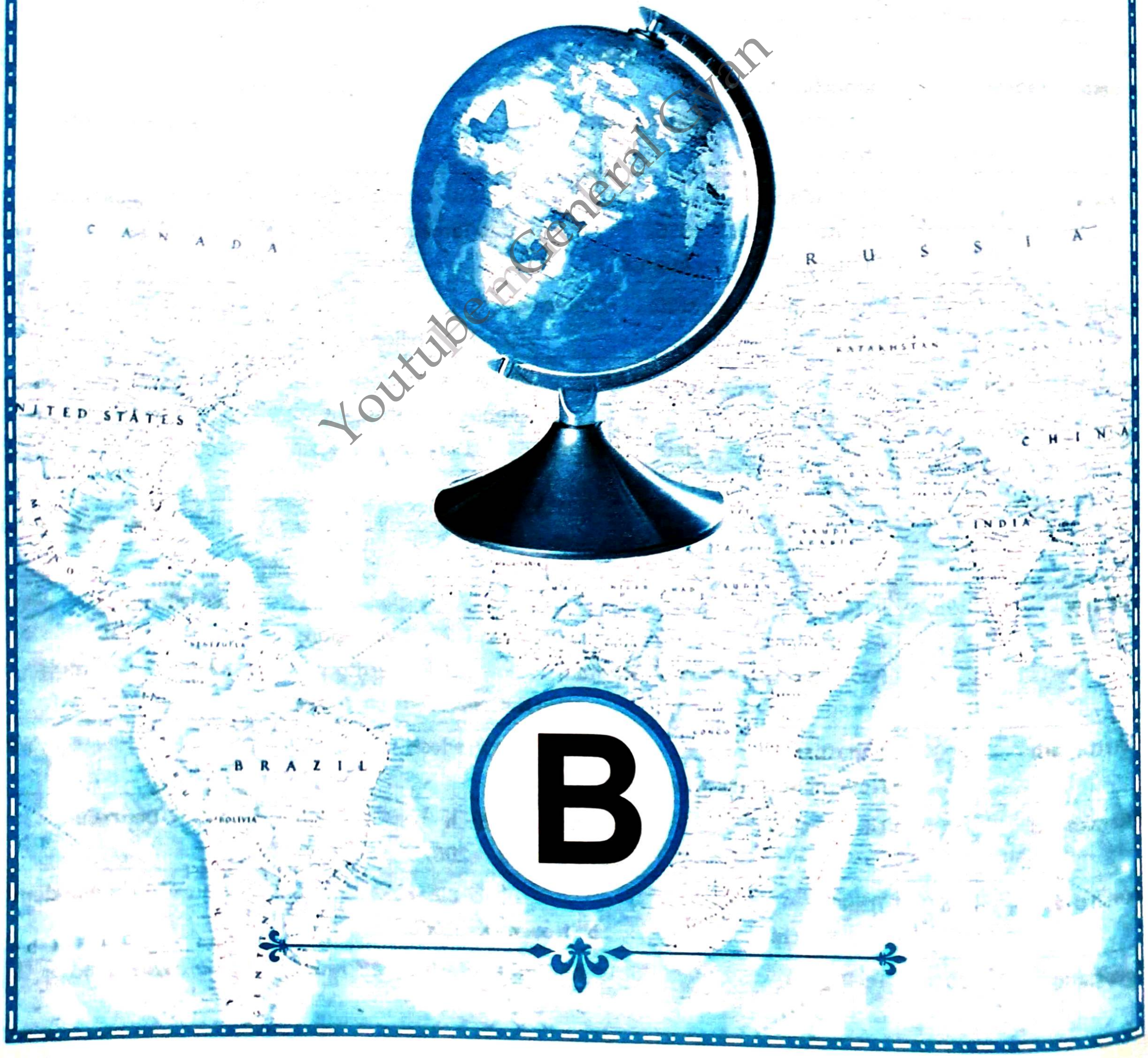
  - Non enforceable

- Which are the indirect provisions related to the legal sanctification Fundamental Duties?

  - Representation of People's Act (1951), **Protection of Civil Rights Act** (1955), **Prevention of Insults to National Honour Act** (1971)

P.N. Bhawati [Chief Justice of Supreme court (1985 - 86)] is also known as father of **Public Interest Litigation** (PIL).

GEOGRAPHY


CANADA
RUSSIA
KAZAKHSTAN
NITED STATES
CHINA
INDIA
BRAZIL
BOLIVIA

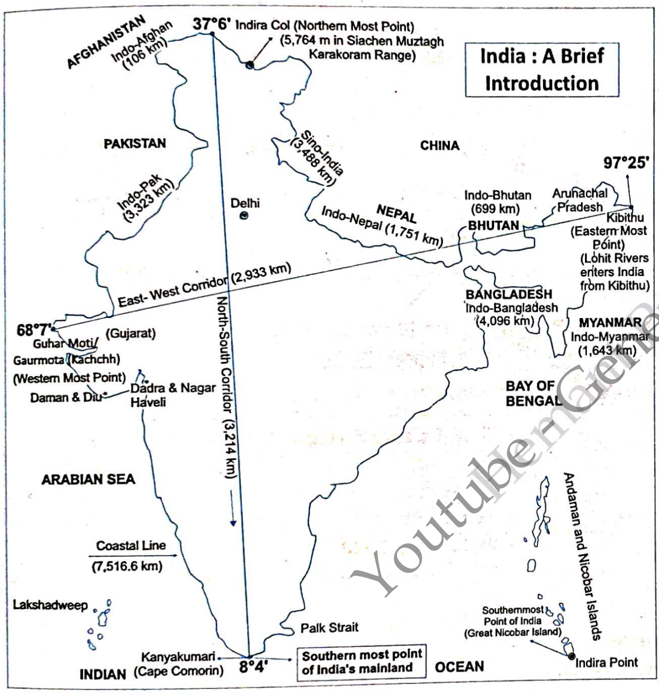
B

Geography of India

A General Introduction

- In which **hemisphere** is India located?

  – Northern Hemisphere


AFGHANISTAN
Indo-Afghan (106 km)
37°6' Indira Col (Northern Most Point)
(5,764 m in Siachen Muztagh Karakoram Range)
India : A Brief Introduction
PAKISTAN
Sino-India (3,488 km)
CHINA
97°25'
Indo-Pak (3,323 km)
Delhi
NEPAL
Indo-Nepal (1,751 km)
Indo-Bhutan (699 km)
BHUTAN
Arunachal Pradesh
Kibithu (Eastern Most Point)
(Lohit Rivers enters India from Kibithu)
East- West Corridor (2,933 km)
BANGLADESH
Indo-Bangladesh (4,096 km)
MYANMAR
Indo-Myanmar (1,643 km)
68°7'
(Gujarat)
Guhar Moti/ Gaurmota (Kachchh)
(Western Most Point)
Daman & Diu
Dadra & Nagar Haveli
North-South Corridor (3,214 km)
BAY OF BENGAL
ARABIAN SEA
Andaman and Nicobar Islands
Coastal Line (7,516.6 km)
Lakshadweep
Palk Strait
Southernmost Point of India (Great Nicobar Island)
Kanyakumari (Cape Comorin)
INDIAN
8°4'
Southern most point of India's mainland
OCEAN
Indira Point

- What is **India's** rank in the world in terms of **area**?

  – Seventh

The Indian **landmass** extension from **east** to **west** is **2,933 km** and from **north** to **south** is **3,214 km**.

- What is India's share of world's **total area**? **- 2.4%**

- What is the **latitudinal expansion** of mainland India?

  - 8°4'North to 37°6' North

- What is determined by the **longitudinal lines**?

  - Time and location

- **Tropic of Cancer** passes through how many states of India?

  - Eight

States of India through which Tropic of Cancer passes	
1. Gujarat	**2.** Rajasthan
3. Madhya Pradesh	**4.** Chhattisgarh
5. Jharkhand	**6.** West Bengal
7. Tripura	**8.** Mizoram

- Which **latitude** divides India into two equal parts?

  - Tropic of Cancer (23½° North)

- What is the appoximate time difference between **sunrise** and **sunset** between India's westernmost point **Guhar Moti** (Gujarat) and eastern most point **Kibithu** (Arunachal Pradesh)?

  - 2 hours

- **Indian Standard Time line (82½°)** calculated on the basis of which city?

  - Mirzapur near Prayagraj (Uttar Pradesh)

- What is the difference between **Indian Standard Time** and **Greenwich Mean Time**? **- 5 1/2 hours**

- Which is the **southernmost point** of India?

  - Indira Point (Great Nicobar Island)

If the **Indian Standard Meridian** is showing **mid-day/noon** on the **meridian**, then the local time at [1° = 4 minutes] GMT will be **5** and **half hours** behind the mid day i.e. **6 : 30 am** and when there is mid day/noon at GMT, ISM will experience **5:30 pm**.

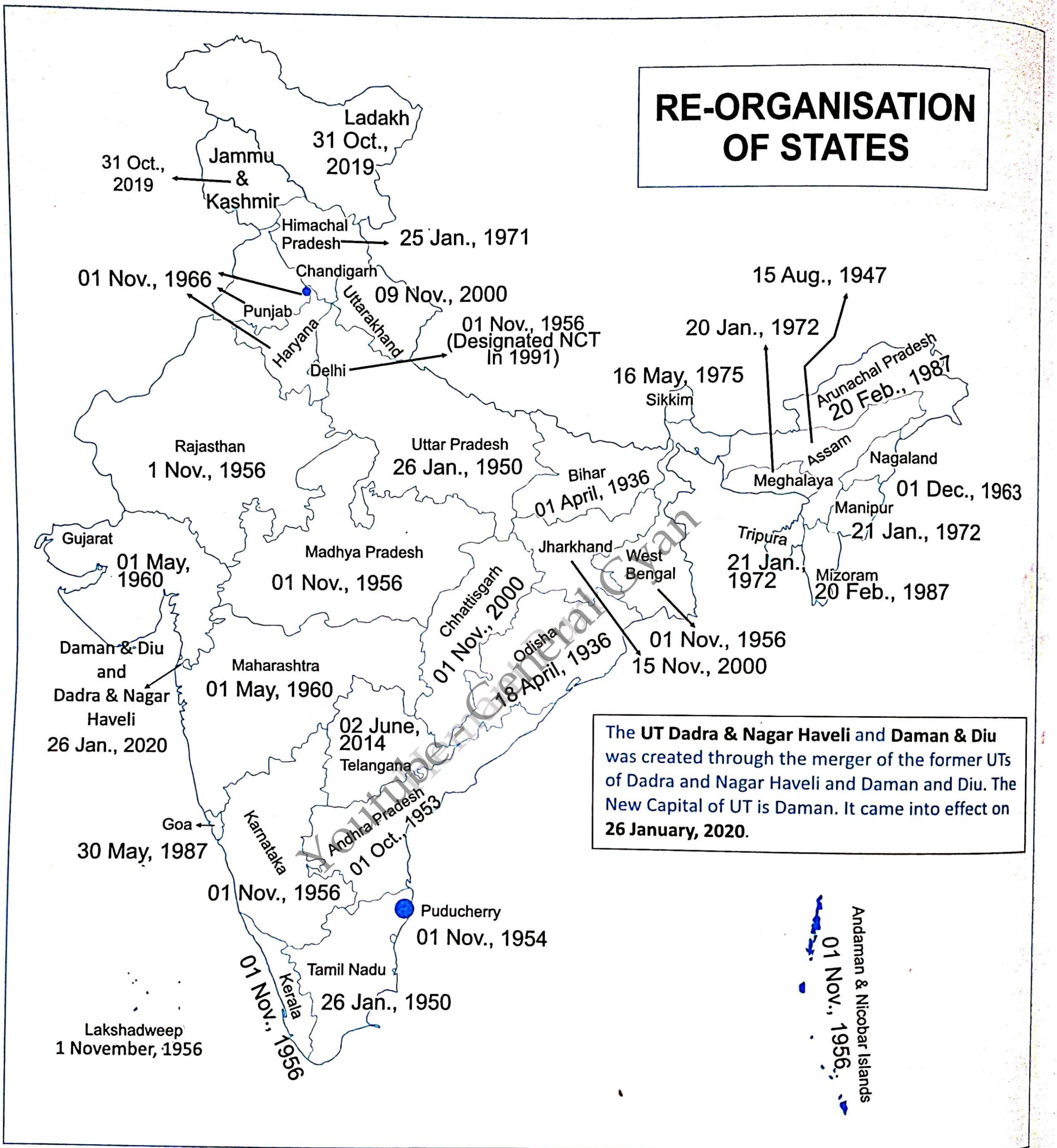
- Which is the only district in India, whose border touches four states? **- Sonbhadra** (Uttar Pradesh)

Indira Point, located on the island of **Great Nicobar** is **India's southernmost point** of **mainland India**.

The **Indian Standard Time Line** (82½°) passes through **five states** : **Uttar Pradesh**, **Madhya Pradesh**, **Chhattisgarh**, **Odisha** and **Andhra Pradesh**.

Youtuber General Gyan

RE-ORGANISATION OF STATES


Ladakh
31 Oct., 2019
31 Oct., 2019
Jammu & Kashmir
Himachal Pradesh
25 Jan., 1971
Chandigarh
01 Nov., 1966
Punjab
Haryana
Uttarakhand
09 Nov., 2000
Delhi
01 Nov., 1956 (Designated NCT In 1991)
15 Aug., 1947
20 Jan., 1972
16 May, 1975
Sikkim
Arunachal Pradesh
20 Feb., 1987
Rajasthan
1 Nov., 1956
Uttar Pradesh
26 Jan., 1950
Bihar
01 April, 1936
Assam
Meghalaya
Nagaland
01 Dec., 1963
Manipur
21 Jan., 1972
Tripura
21 Jan., 1972
Mizoram
20 Feb., 1987
Gujarat
01 May, 1960
Madhya Pradesh
01 Nov., 1956
Jharkhand
West Bengal
01 Nov., 1956
15 Nov., 2000
Chhattisgarh
01 Nov., 2000
Odisha
18 April, 1936
Daman & Diu and Dadra & Nagar Haveli
26 Jan., 2020
Maharashtra
01 May, 1960
02 June, 2014
Telangana
Goa
30 May, 1987
Karnataka
01 Nov., 1956
Andhra Pradesh
01 Oct., 1953
Puducherry
01 Nov., 1954
Tamil Nadu
26 Jan., 1950
Kerala
01 Nov., 1956
Lakshadweep
1 November, 1956
Andaman & Nicobar Islands
01 Nov., 1956

The **UT Dadra & Nagar Haveli** and **Daman & Diu** was created through the merger of the former UTs of Dadra and Nagar Haveli and Daman and Diu. The New Capital of UT is Daman. It came into effect on **26 January, 2020**.

India's Extreme Points

- **Northernmost Point Indira Col** (Ladakh)
- **Southernmost Point Indira Point** (Great Nicobar Island)
- **Westernmost Point Guhar Moti** (Gujarat)
- **Easternmost Point Kibithu** (Arunachal Pradesh)
- **Southernmost Point in mainland Kanyakumari** (Tamil Nadu)

The major **mountain ranges** of the **Himalayas** are ranked from **north to south** as- **Karakoram-Ladakh-Zaskar-Pirpanjal-Shivalik**

The **Indian Standard Time Line** and the **Tropic of Cancer** intersect each other in **Chhattisgarh**.

- What is the **coastal length** of **mainland India**?
  - About 6,100 km
- Which **Indian states** touch the border of **Myanmar**?
  Arunachal Pradesh, Nagaland, Manipur and Mizoram
- What is **India's rank** in the **world** in terms of **population**?
  - Second (1st China)
- How many **States** and **Union Territories** touch the border of **Assam**? **- Seven**
- What are the changed names of **Ross Island, Neil Island** and **Havelock Island**?
  - Netaji Subhash Chandra Bose Island, Shaheed Island and Swaraj Island respectively
- Which **strait** separates India from **Sri Lanka**?
  - Palk Strait
- Which Indian state is surrounded by **Bangladesh** on **three** sides? **– Tripura**

Important Channels of India

10° Channel	Between Andaman and Nicobar
9° Channel	Between Lakshadweep and Minicoy
8° Channel	Between Maldives and Minicoy
Great Channel	Sumatra (Indonesia) and Nicobar
Palk Strait	Between Tamil Nadu (India) and Sri Lanka
Mahim Creek	A narrow Creek, Mumbai
Gulf of Kutch	Western Gujarat
Gulf of Khambhat	Eastern Gujarat, Mouth of Narmada and Tapti
Lakshadweep Sea	Between Lakshadweep and Malabar Coast
Coco Strait	Between Coco Islands (Myanmar) and North Andaman
Duncan Passage	Between South Andaman and Little Andaman

Length of International Boundaries of India with Allied States (18)

S.No.	Country	Length (km)	Boundary Line	Indian States/UTs Along The International Boundary
1.	Bangladesh	4,096.7	Radcliffe Line	5 (West Bengal, Meghalaya, Tripura, Mizoram, Assam)
2.	China	3,488	McMahon Line	5 (Ladakh, Himachal Pradesh, Uttarakhand, Sikkim, Arunachal Pradesh)
3.	Pakistan	3,323	Radcliffe Line	5 (Gujarat, Rajasthan, Punjab, Jammu & Kashmir, Ladakh)
4.	Nepal	1,751	—	5 (Uttarakhand, Uttar Pradesh, Bihar, West Bengal, Sikkim)
5.	Myanmar	1,643	—	4 (Arunachal Pradesh, Nagaland, Mizoram, Manipur)
6.	Bhutan	699	—	4 (West Bengal, Sikkim, Assam, Arunachal Pradesh)
7.	Afghanistan	106	Durand Line	1 [Ladakh]

McMahon Line

- The McMahon Line is a border line between **Tibetan region** of **China** and **North-East Region** of India. It is proposed by **Henry McMahon** on **27th April, 1914** at **Shimla Convention** between the **British** and **Tibetan representatives**. Currently, it remains an effective boundary between **China** and **India**. The line is named after **Sir Henry McMahon**, a Foreign Secretary of British India.
- The **McMahon** Line has been regarded by India as the **legal national border**, but **China** rejects the **Shimla** Accord and claims further the McMahon Line.

Radcliffe Line

- After partition, on **17th August, 1947** the boundary demarcated between **India** and **Pakistan** is known as **Radcliffe Line**. This line was determined by the **Border Commission**.
- As **Cyril Radcliffe** was the President of the Commission, the boundary line between **India** and **Pakistan** is named after him.
- Today, its western part still serves as the **Indo-Pakistan border** and the eastern part serves as the **Indo-Bangladesh border**.

The **Karakoram range** belonging to **Trans Himalayan Mountain Region** is known as the **backbone of High Asia**.

India : An Overview

- **Country** - India/Bharat
- **Other Names** - Aryavarta, Jambudweep, Bharat Varsha, Hindustan
- **Capital** - New Delhi
- **Geographical Location** - Situated in North-Eastern Hemisphere
- **Latitudinal Extension** - 8°4' to 37°6' Northern Latitude
- **Longitudinal Extension** - 68°7' to 97°25' Eastern longitudes
- **Standard Time** - 82°30' Eastern longitude, 5 hours 30 minutes ahead of GMT
- **Geographical Extension** - (Length- North to South 3,214 km) (Breadth- East to West 2,933 km)
- **Land boundary** - 15,106.7 km
- **Water boundary** - 7,516.6 km
- **Geometrical Shape** - Quadrangular
- **Extension of Mountainous Region** - 10.7%
- **Extension of Hill Area** - 18.6%
- **Extension of Plateau Region** - 27.7%
- **Extension of Fields** - 43%
- **Territorial water boundary** - 12 nautical miles from the coast
- **Exclusive Economic Zone** - 200 nautical miles from Contiguous zone
- **Contiguous Zone** - 24 nautical miles from coastal line
- **Climate** - Monsoonal Climate
- **Area** - 32,87,263 sq.km.
- **Share in World's total area** - 2.42%
- **Rank in terms of area** - 7th
- **Total Population** - 1,210,193,422 (17.5% of World's total Population)
- **Rank in terms of Population** - Second
- **Male Population** - 62,31,21,843
- **Female Population** - 58,74,47,730
- **Rural Population** - 83.34 Crore (68.8%)
- **Urban Population** - 37.71 Crore (31.2%)
- **Decadal Growth** - 17.64% (2001-2011)
- **Sex Ratio** - 943 per thousand males
- **Population Density** - 382 Persons per sq.km.
- **Total Literacy** - 77.7%
- **Male Literacy** - 84.7%
- **Female Literacy** - 70.3%
- **Scheduled Caste Population** - 20,13,78,086 (16.6% of total Population)
- **Scheduled Tribes Population** - 10,42,81,034 (8.6% of total Population)
- **Number of States** - 28
- **Number of Union Territories** - 8
- **Tropic of Cancer passes through** - 8 states
- **States/UTs sharing International Boundaries** - 18
- **Number of International Airports** - 17
- **Number of National Highways** - 599
- **Number of Major Ports** - 13
- **National Animal** - Tiger
- **National Heritage Animal** - Elephant
- **National Bird** - Peacock
- **National Tree** - Banyan (Ficus benghalensis)
- **National Flower** - Lotus
- **National Emblem** - Lion Capital of Ashoka
- **National Anthem** - Jana–Gana–Mana
- **National Song** - Vande Mataram
- **Official Language** - Hindi
- **National Script** - Devanagari
- **National Quote** - Satyameva Jayate
- **National Flag** - Tricolor
- **National River** - The Ganges
- **National Aquatic Animal** - Ganges Dolphin

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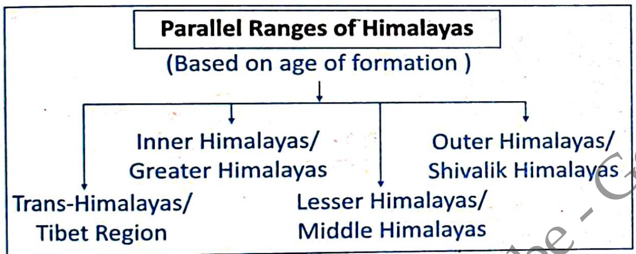
The geographical location of **Puducherry** is spread in the states of **Tamil Nadu** (Karaikal and Puducherry), **Kerala** (Mahe) and **Andhra Pradesh** (Yanam).

Physical Division of India

- **Indian subcontinent** was originally a part of which landmass? - **Gondwanaland**

Indian subcontinent that was originally a part of **Gondwanaland**, shifted northwards merging in Eurasian landmass **55 million years ago.**

- In terms of Geological structure, India is mainly divided into three parts :
  1. Himalayan mountain region
  2. The plain parts of the North
  3. Southern Peninsular Plateau
- The Himalayas are formed from **parallel ring ranges.** Which is the oldest among them? - **Greater Himalayas**


Parallel Ranges of Himalayas
(Based on age of formation)
Inner Himalayas/ Greater Himalayas
Outer Himalayas/ Shivalik Himalayas
Trans-Himalayas/ Tibet Region
Lesser Himalayas/ Middle Himalayas

- Which is the **outermost region** of the **Himalayas?** - **Shivalik**
- In **North India,** the plain extending through the **sub-Himalayas** is called? - **Bhabar**
- The **Bhabar region** to the south of the **Shivalik rock group** is an example of which structure? - **Foot hills Region**

The average elevation of the **Shivalik range** is **600-1200 m.**

- In the middle of which ranges do the **Small Himalayas** lie? - **Great Himalayas and Shivalik**
- Which is the **youngest mountain range** of the Himalayas? - **Shivalik**
- Which mountain range is situated between **Narmada** and **Tapti rivers?** - **Satpura Range**
- Which is the highest mountain range of **Himalayas?** - **Himadri or Greater Himalayas**
- What is the average elevation of the **Greater Himalayas?** - **6,100 meters**
- In which state is the **Pir Panjal Range** located? - **Jammu and Kashmir**

The height of **treeline** is **lower** in the **western Himalayas** than in the **eastern Himalayas.**

- In which part are the wells broken in **Uttarakhand?** - **In Terai part**
- **Aksai China** is a part of which region? - **Ladakh**
- What are the major natural resources of the **Western Himalayan region?** - **Forests**
- Which is the **oldest mountain range** of India?- **Aravalli**
- What is the **approximate age** of **Aravalli range?** - **600-570 million years**

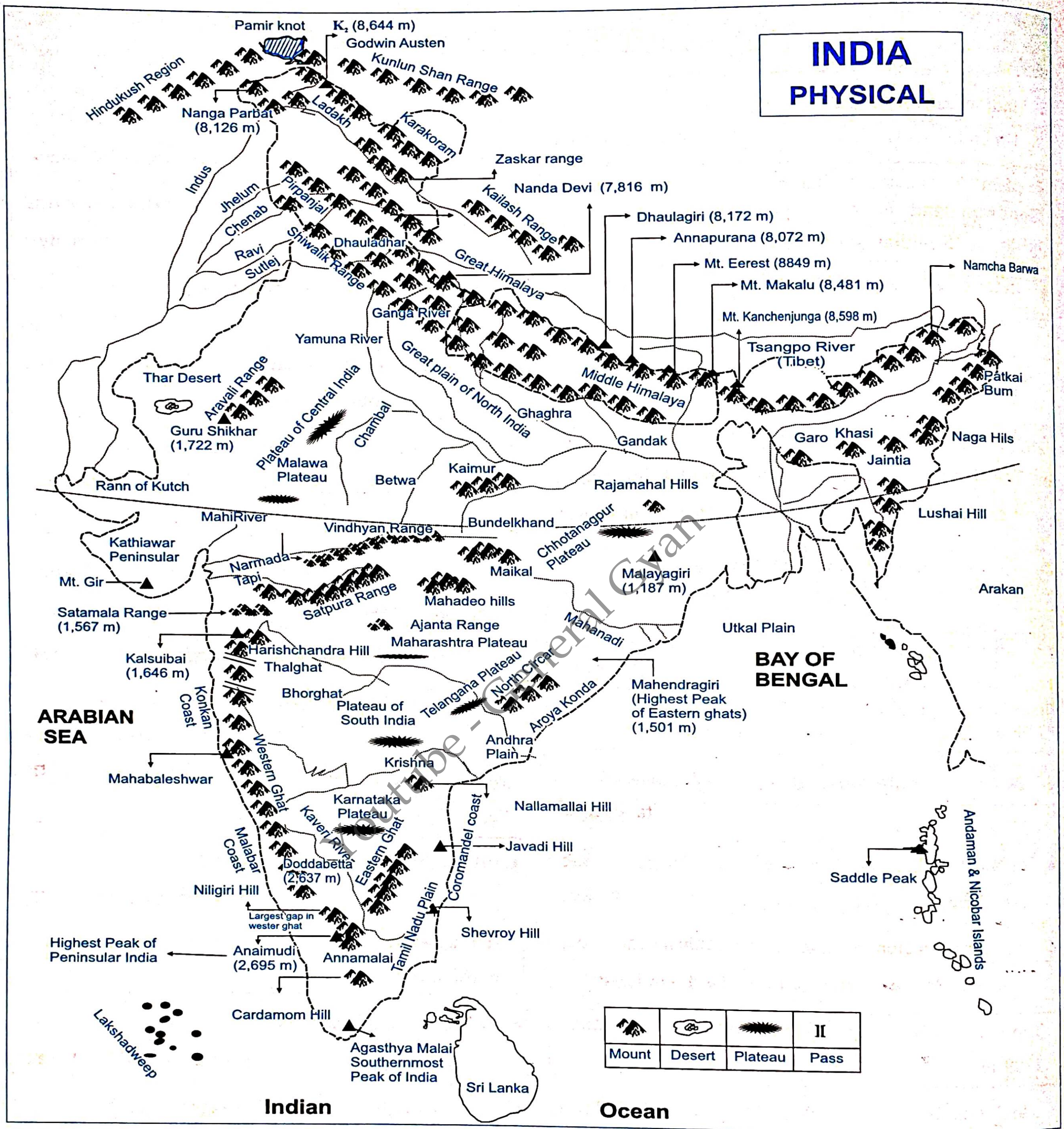
Mount Everest (8849 m) is known as **Sagarmatha** in **Nepal.**

- What type of **mountain range** is Aravalli? - **Residual mountain range**

Meesapulimala (2640 m) is the **second highest peak** in **South India.**

- Which is the **tallest peak** of South India? - **Anamudi** (2,695 m), **Kerala**
- In which states do the **Nilgiri ranges** extend? - **Tamil Nadu and Kerala**
- By what name is the western coast known between **Maharashtra** and **Karnataka?** - **Konkan Coast**
- Between which states do the **Cardamom hills** form the border? - **Kerala and Tamil Nadu**

Rakaposhi, the **world's steepest** mountain peak, is located in the **Karakoram Range.**


INDIA
PHYSICAL
Pamir knot
K2 (8,644 m)
Godwin Austen
Kunlun Shan Range
Hindukush Region
Nanga Parbat (8,126 m)
Ladakh
Karakoram
Zaskar range
Nanda Devi (7,816 m)
Kailash Range
Indus
Jhelum
Pirpanjal
Chenab
Ravi
Sutlej
Shiwalik Range
Dhauladhar
Great Himalaya
Dhaulagiri (8,172 m)
Annapurana (8,072 m)
Mt. Eerest (8849 m)
Mt. Makalu (8,481 m)
Namcha Barwa
Mt. Kanchenjunga (8,598 m)
Ganga River
Yamuna River
Tsangpo River (Tibet)
Thar Desert
Aravali Range
Plateau of Central India
Great plain of North India
Middle Himalaya
Patkai Bum
Guru Shikhar (1,722 m)
Chambal
Ghaghra
Gandak
Garo
Khasi
Jaintia
Naga Hils
Malawa Plateau
Kaimur
Rann of Kutch
Betwa
Rajamahal Hills
Lushai Hill
MahiRiver
Vindhyan Range
Bundelkhand
Chhotanagpur Plateau
Kathiawar Peninsular
Narmada
Tapi
Maikal
Malayagiri (1,187 m)
Arakan
Mt. Gir
Satpura Range
Mahadeo hills
Satamala Range (1,567 m)
Ajanta Range
Mahanadi
Utkal Plain
Maharashtra Plateau
Kalsuibai (1,646 m)
Harishchandra Hill
Thalghat
BAY OF BENGAL
Bhorghat
Telangana Plateau
North Circar
Mahendragiri (Highest Peak of Eastern ghats) (1,501 m)
ARABIAN SEA
Konkan Coast
Plateau of South India
Aroya Konda
Andhra Plain
Western Ghat
Mahabaleshwar
Krishna
Nallamallai Hill
Karnataka Plateau
Kaveri River
Eastern Ghat
Coromandel coast
Javadi Hill
Malabar Coast
Doddabetta (2,637 m)
Andaman & Nicobar Islands
Saddle Peak
Niligiri Hill
Tamil Nadu Plain
Largest gap in wester ghat
Shevroy Hill
Highest Peak of Peninsular India
Anaimudi (2,695 m)
Annamalai
Cardamom Hill
Lakshadweep
Agasthya Malai Southernmost Peak of India
Sri Lanka
Mount
Desert
Plateau
Pass
Indian
Ocean

Cardamom Hills (Ealaimalai hills) are located to the south of **Annamalai Hills** (on which the Anamudi peak is located) and both are separated by **Shenkottai pass**. They are famous for **Cardamom cultivation**.

- ◆ In which state are the **Shevaroy mountains** located?

  - Tamil Nadu

- ◆ Which is the highest mountain peak of India?

  - K2 (Godwin Austin - 8611 m)

Eastern ghats and **western ghats** meet at **Nilgiri hills**.

- ◆ Which pass connects **Uttarakhand** with **Tibet**?

  - Mana Pass

Angular forests and **small grasslands** in **Uttarakhand** are known as **Bugyal** or **Payar**.

- In which state is **Nanda Devi Shikhar** located? **- Uttarakhand**
- Which is the highest mountain peak in the **Aravalli** Range? **– Guru Shikhar** (1722 m, Rajasthan)
- In which country is **Arakan Yoma**, a range of **Himalayan** mountains located? **- Myanmar**
- **Kullu valley** is situated between which mountain ranges? **- Dhauladhar and Pir Panjal**
- **Palghat Pass** is situated between which hills? **- Nilgiri and Annamalai hills**
- In which state is the **Nathu La Pass** located? **– Sikkim**
- **Lipu lekh, Mana** and **Niti pass** are located in which state? **- Uttarakhand**
- In which state is the **Rohtang Pass** located? **- Himachal Pradesh**

The **average snow line** found in the **eastern Himalayas** is at **3,500 meters** and in the **western Himalayas** at an altitude of **2,500 meters.**

- Which is the **largest glacier** in India? **- Siachen** (Ladakh)
- Where is the **Chaurabadi Glacier** located? **- North of Kedarnath Temple** (Uttarakhand)
- The **plateau of Meghalaya** is a part of ? **-Peninsular India**
- The **peninsular mountains** of India were formed in which period? **- Paleozoic Era**
- Which plateau is situated between the **Aravalli** and **Vindhya ranges**? **- Malwa plateau**
- Where is **Dandakaranya region** located? **- Intermediate parts of Chhattisgarh and Orissa**

The **broad flat structural site** in the middle of the **Lesser Himalayas** and **Shivalik Range** is known as **Dwar** in the east and **Doon** in the **west.**

- India's **average sea level** is measured off the coast? **- Chennai**
- What is the **total length** of the **coastline of India**? **- 7,517 km** (approx)
- Which of the coastal state of India has the **longest border**? **- Gujarat**
- How many states of India border the **sea coastline**? **- 9**

Coastal states of India

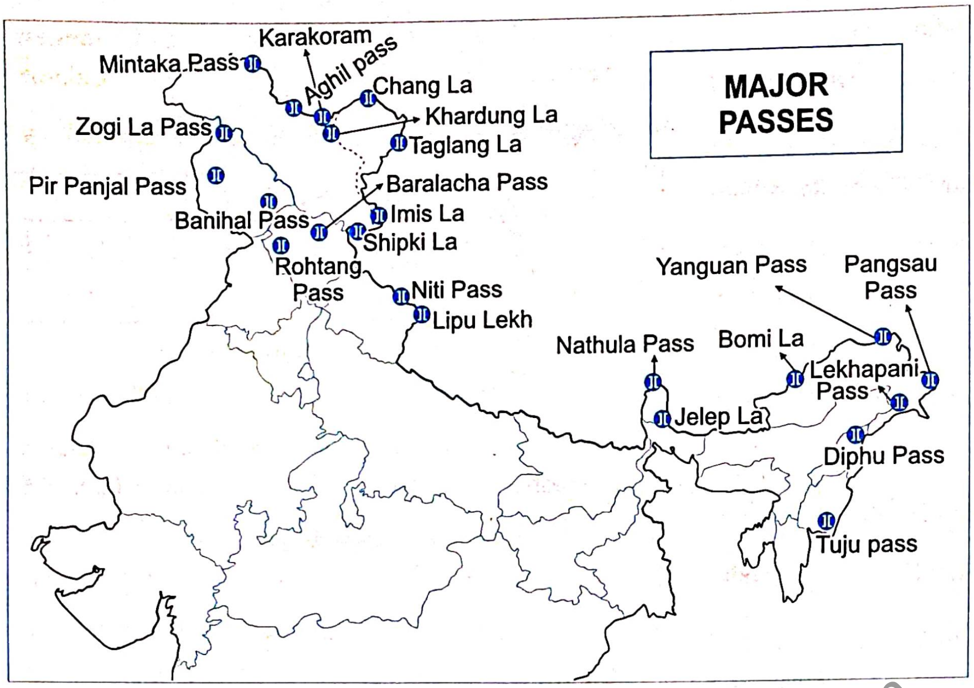
1. Gujarat **2.** Maharashtra **3.** Karnataka **4.** Kerala **5.** Tamil Nadu **6.** West Bengal **7.** Andhra Pradesh **8.** Odisha **9.** Goa

- Which ocean was named as **Ratnakar** in ancient Indian historical geography? **- Indian Ocean**
- What is the name of the coast of **Tamil Nadu** and **Andhra Pradesh** (eastwards)? **- Coromandel Coast**
- By what other name is **Kanyakumari** known? **- Cape Comorin**
- Which is the highest peak of **Andaman and Nicobar** Islands? **- Saddle Peak** (737 m)
- Where are **Andaman and Nicobar Islands** located? **- Bay of Bengal**
- What is the number of islands in **Andaman and Nicobar Islands**? **- 572**
- Which two islands separate the **ten degree channel**? **- Andaman from Nicobar island**

Importants Peaks of the Himalayan Mountains

Peak	Country	Height (m)
• Mt. Everest	Nepal	8,849
• (K_2) /Godwin Austen	India	8,611
• Kanchenjunga	India	8,598
• Lhotse	Nepal/Tibet	8,501
• Makalu	Nepal	8,481
• Dhaulagiri	Nepal	8,172
• Manaslu	Nepal	8,163
• Nanga Parbat	India	8,124
• Annapurna	Nepal	7,817
• Nanda Devi	India	7,816
• Kamet	India	7,756
• Namcha Barwa	China	7,756
• Saltoro Kangri	India	7,772
• Gurla Mandhata	China	7,728

The part of the Himalayas located near the **Sutlej** & the **Indus rivers** is known as the **Kashmir Himalayas** or the **Punjab Himalayas.**


MAJOR PASSES
Karakoram
Mintaka Pass
Aghil pass
Chang La
Khardung La
Zogi La Pass
Taglang La
Pir Panjal Pass
Baralacha Pass
Banihal Pass
Imis La
Shipki La
Rohtang Pass
Niti Pass
Lipu Lekh
Yanguan Pass
Pangsau Pass
Nathula Pass
Bomi La
Lekhapani Pass
Jelep La
Diphu Pass
Tuju pass

Minicoy Island belongs to the **remote island** of the **Indian coastline.**

- ◆ Which island is situated between **India** and **Sri Lanka**?
  - **Pamban Island** (Rameswaram)
- ◆ Which is India's largest city on the islands? - **Mumbai**
- ◆ Where is **Kori Creek** located?
  - **Kutch region of Gujarat**
- ◆ Between which countries is the **Sir Creek** dispute?
  - **India and Pakistan**
- ◆ **Burjil** and **Banihal Pass** are situated in which mountain range? - **Pir Panjal Range**

- ◆ Where is **Barren Island** located?
  - **In Andaman Sea, 140 km from Port Blair**

Barren Volcano on the **Barren Island** is the **only confirmed active volcano** in **South Asia** along a chain of volcanoes from **Sumatra** to **Myanmar**. It last erupted in **September 2018** leading to earthquakes in **Sulawesi** (Indonesia).

- ◆ Where does **Rama Setu** (Adam's Bridge) lies in mainland India? - **Dhanushkodi**
- ◆ Where is **Lakshadweep** located? - **Arabian Sea**
- ◆ Which island group of India is formed of **coral**?
  - **Lakshadweep**

- ◆ **Mumbai** the largest port city of India is located on **Salsette island.**
- ◆ **Elephanta caves**, located 10 km away from **Gateway of India** in Mumbai, are famous for cave **temples.**
- ◆ **Willingdon Island** : It is one of the largest artificial man-made island in **Kochi, Kerala.**
- ◆ **Sir Creek** a **96 km** long marshy land, located in **Rann of Kutchh**, is a disputed territory between **India** and **Pakistan.**
- ◆ **Kori Creek** is a **tidal creek** in the **Kutch region.** It is a **marshy tract** which **demarcates** the boundary between **India** and **Pakistan.**

Major Valleys of India

Valley	Description
Chumbi Valley	Important tourist sites like **Chumbi, Bharmour, Dalhousie** and **Khajjiar** are located in this valley.
Kangra Valley	Important cultural tourist site like **Dharmshala** is located in this Valley.
Malana Valley	This is famous as **Little Greece** in **Himachal Pradesh.**
Spiti Valley	**Tabo Monastery** is situated here and it is famous for Buddhist monasteries.
Pangi Valley	Residential area for **Pangwal** and **Bhotiya Tribes.**
Markha Valley	It is the famous valley of **Ladakh** (Jammu & Kashmir).
Kullu Valley	It is situated between **Dhauladhar** & **Pir Panjal** which is called as the **Valley of Gods.**
Sangla Valley	It is located in **Himachal Pradesh** and it is also known as **Baspa Valley.** It is surrounded by **Mountain Peaks.**
Parvati Valley	It is situated in **Kullu region** of **Himachal Pradesh.** This valley provides routes for Hindu and Sikh pilgrims for **Manikaran City.**
Dzukou Valley	It is situated 30 km away from **Kohima** (Nagaland).
Yumthang Valley	It is situated 197 km away from **Sikkim** state. This valley is known as the **Valley of Flowers.**

Climate

- What is the **main factor** determining the **climate** of an area? - **Latitudinal location**

For the factors that control climate, an acronym **LANDFORMS** is used, which affect the climate: **L** (Latitude), **A** (Altitude), **N** (Nearness from Sea), **D** (Direction of wind), **F** (Forest), **O** (Ocean Currents), **R** (Rainfall), **M** (Mountain), **S** (Soil).

- What is the general direction of **summer monsoon flow** in India? - **South-West to North-East**
- In the **north-western plains** of **India**, which effect leads to winter rains? - **Western disturbances**
- Which states of India receive **winter rainfall**? - **Punjab and Tamil Nadu**
- What is the **average annual rainfall** in India? - **125 cm** (approx)
- Which regions have the **highest rainfall** in India? - **Western Ghats, Eastern Himalayas and Meghalaya**

Tropical monsoon climate is found in India and most of the rainfall is received by the **southwest monsoon**. The climate is called **monsoon climate**.

- The **high temperature** and **low pressure** in the **summer season** on the Indian subcontinent tract the air from the **Indian Ocean** resulting in – - **Southwest monsoons**

Trade Winds

Trade winds blow steadily towards the **equator** from the **north-east** in the **northern hemisphere** and from the **south-east** in the **southern hemisphere**. These winds blow between **5° to 30° N** and **S latitude**.

Regional names of Pre Monsoon Rains

Tea Shower/Bardoli Chherha	– Assam
Kal baisakhi	– West Bengal
Mango shower	– Kerala, Coastal Karnataka
Cherry Blossoms/Coffee Showers	– Kerala, Karnataka

- Which is the **least rainy place** in India? - **Leh**

- In **West Bengal** and **Assam**, local winds in the summer season are known as? - **Kaal Baisakhi and Tea Shower/Bardoli Chherha**
- How many classes did **Koppen** divide the climate of the world in the **year 1918**? – **Five**
- In which state does the **monsoon arrives first** in India? - **Kerala**

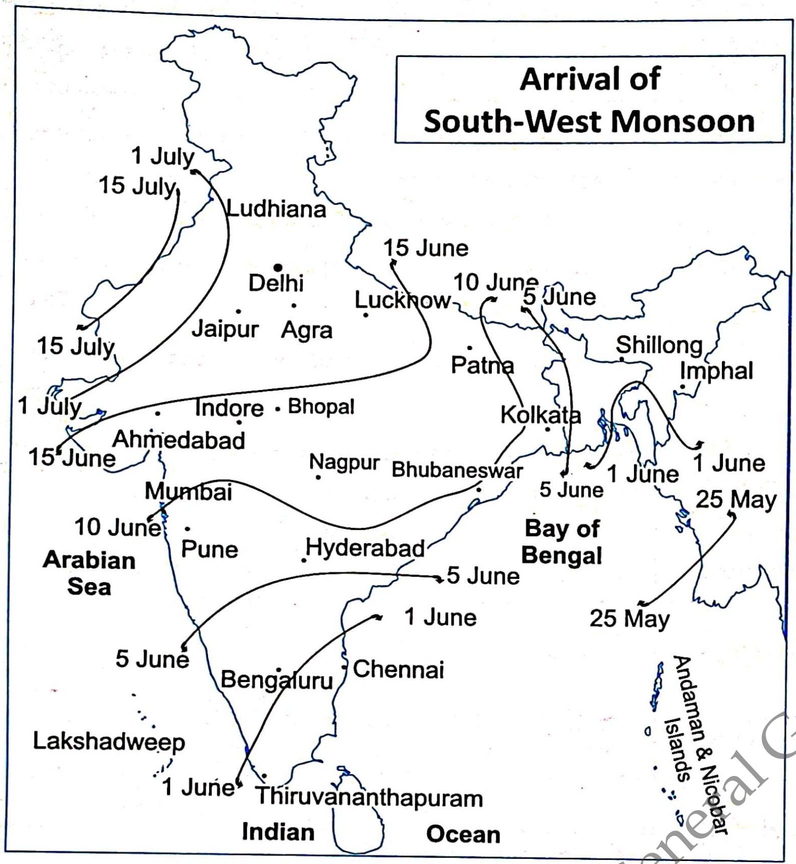
Classification of Climate according to Koppen

Types of climate	Character Signal	Area
Short dry season Vachi Monsoon Climate	Amw	South of Goa, west coast of India
Dry summer season	As	Coromandel Coast of Tamil Nadu
Tropical Savannah Climate	Aw	Most of the peninsular plateau of south of the Tropic of Cancer
Semi arid steppe climate	BShw	Northwest Gujarat, parts of western Rajasthan and Punjab
Hot desert climate	BWhw	Western part of Rajasthan
Dry cold season	Cwg	Gangetic plain, eastern Rajasthan, northern Madhya Pradesh, most of the north eastern region of India
Short summer and winter wet season	Dfc	Arunachal Pradesh, Sikkim, Assam
Polar climate	E	J & K, Ladakh, Himachal Pradesh and Uttarakhand
Tundra climate	Et	Mountainous regions of Uttarakhand

Inter-Tropical Convergence Zone (ITCZ)

The Inter-Tropical Convergence Zone or **ITCZ** is a **belt of low pressure** which encircles the earth generally **near the equator** where the **trade winds** of **northern** and **southern hemispheres** converge. It is characterised by **convective activity** which often generates **vigorous thunderstorms** over large area. It is most active over **continental land masses** but lesser over the oceans.

Loo is the **dry** and **painful winds** in the **northern plain** that flows from **Punjab** to **Bihar**.


Arrival of South-West Monsoon
1 July
15 July
Ludhiana
Delhi
Jaipur
Agra
15 June
Lucknow
10 June
5 June
Patna
Shillong
Imphal
15 July
1 July
Indore
Bhopal
Kolkata
Ahmedabad
15 June
Nagpur
Bhubaneswar
1 June
1 June
Mumbai
5 June
25 May
10 June
Pune
Hyderabad
Bay of Bengal
Arabian Sea
5 June
1 June
25 May
5 June
Chennai
Bengaluru
Lakshadweep
Andaman & Nicobar Islands
1 June
Thiruvananthapuram
Indian
Ocean

Factors affecting Climate :

1. Annual and monthly average temperature
2. Annual and monthly rainfall
3. Vegetation

◆ **Amritsar** and **Shimla** are situated at almost the same latitude, but what is the main reason for their climate differences? **- Variation in their heights/Altitude**

◆ Which state/states are related to **mango rain**? **- Kerala and coastal Karnataka**

◆ **Coffee** rains and **cherry blossoms** are related to? **- Monsoon showers before the end of summer season** (Karnataka)

◆ How long is the **southwest monsoon** time normally in India? **- June to September**

◆ **Norwesters originated** in which region? **- Chota Nagpur Plateau**

◆ What are the normal monsoon months in **Tamil Nadu**? **- November-December**

◆ Which components affect the **Indian monsoon**? **- Tibetan plateau, Jet stream, El Nino and La Niña etc.**

◆ Which state receives the maximum rainfall from the **North Eastern Monsoon**? **- Tamil Nadu**

◆ Which regions of India have an **average annual rainfall** of **200 millimeters**? **- Jammu and Kashmir & Western Rajasthan**

◆ Where is the **highest daily temperature** in India found? **- In the desert regions of Rajasthan**

◆ What is responsible for **monsoon blast** in India? **- Eastern jet flow**

Distribution of Rainfall

Average rainfall is **125 cm** in India, but it has regional variation due to various topographical features as follows :

1. **Areas of High Rainfall :** Region having rainfall greater than **200 cm**. Examples : **Western Coast, Western Ghats, Sub-Himalayan region, North-Eastern India.**
2. **Areas of Medium Rainfall :** In such region rainfall occurs between **100 cm** to **200 cm** in area of **southern Gujarat, eastern Tamil Nadu, North-East Peninsular region covering Odisha, Jharkhand, Bihar, eastern Madhya Pradesh, Northern plains of Ganga** adjoining **Lower Himalayan Cachar Valley** and **Manipur.**
3. **Areas of Low Rainfall :** Rainfall occurs between **50 cm** to **100 cm** in the region of **Western Uttar Pradesh, Delhi, Haryana, Punjab, Jammu and Kashmir, Eastern Rajasthan, Gujarat** and **Deccan Plateau.**
4. **Areas of Inadequate Rainfall :** Rainfall less than **50 cm** occurs in the region of **Peninsular India**, which include **Andhra Pradesh, Karnataka** and **Maharashtra, Ladakh** and some parts of **Western Rajasthan.**

The **jet stream** refers to the air currents that flow around **12 km** above the ground **west to east** in the **middle latitudes** of the **troposphere.**

Soil

Classification of Soils in India

(On the basis of genesis, colour, composition and location)

- Alluvial Soil
- Black Soil/Regur
- Red and Yellow Soil
- Laterite Soil
- Arid Soil
- Saline and Alkaline Soil
- Peaty and Marshy Soil
- Forest Soil

◆ The word **soil** originates from the **Latin word Solum**, which literally means – **- Floor**

◆ Which **soil** covers the **maximum area** in India? **- Alluvial soil**

◆ By what other name is **Regur soil** known? **- Black soil**

Black soil is also called **self-contained soil**, which requires **irrigation work**. This soil is considered most suitable for **cotton cultivation**.

◆ In which state is the maximum expansion of **regur soil** found? **- Maharashtra**

◆ Which soil has more abundance in **Malwa plateau**? **- Black soil**

Yellow color of the soil is due to presence of **ferric oxide**, while **red color** is due to presence of **iron oxide**.

◆ **Laterite soil** is mainly found in which states? **- Kerala, Karnataka and Maharashtra**

◆ Due to the **high amount of iron**, which soil is becoming **infertile** day by day? **– Laterite**

Gypsum is used to reduce the **alkalinity** of the soil.

◆ Where is the **laterite soil** mainly found in India? **- Malabar coastal region**

◆ Which type of soil has the **lowest water holding capacity**? **- Loamy Soil**

◆ From what type of **soil** do plants get the **most water**? **- Smooth soil**

◆ Which crops increase **soil fertility**? **- Pulses**

◆ By which geographical process was the **Chambal Valley** formed? **- Fluvial erosion**

◆ Which soil is suitable for **tea gardens**? **- Laterite**

◆ What particles are found in the **loam soil**? **- Sand, silt and clay**

◆ Which **micro element** is most lacking in India's soil? **- Zinc**

◆ What is the ancient **alluvial soil** of the **Gangetic plain** called? **- Bangar**

◆ Which mineral is used to make **acidic soil** arable? **- Lime**

◆ Which state has the most **alkaline soil** in India? **- Uttar Pradesh**

Saline soil lacks in **nitrogen** and **lime**.

◆ Why is the color of **organic soil blue**? **- Due to alum and ferrous iron**

◆ Which mineral is found in the soil of **western Rajasthan**? **- Calcium**

◆ Which **nutrient** is found in **desert soil**? **- Nitrogen**

◆ What is the most effective way of prevention of **soil erosion**? **- Afforestation**

Institutes for the reclamation of Barren land	
• Space Application Centre	Ahmedabad
• National Remote Sensing Agency	Hyderabad
• Centre of Studies in Resource Engineering	Mumbai
• Council of Scientific and Industrial Research	Delhi

The **red** and **yellow soil** are aluminic in nature, which lacks **nitrogen**, **phosphorus** and **humus** (organic matter).

Natural Vegetations

	Forest cover of different types of forest	Percentage
Group 1	Tropical Wet Evergreen Forest	**2.92**
Group 2	Tropical Semi-Evergreen Forest	**13.79**
Group 3	Tropical Moist Deciduous Forest	**19.73**
Group 4	Littoral and Swamp Forest	**0.69**
Group 5	Tropical Dry Deciduous Forest	**41.87**
Group 6	Tropical Thorny Forest	**2.25**
Group 7	Tropical Dry Evergreen Forest	**0.13**
Group 8	Subtropical Broadleaved Hill Forest	**2.69**
Group 9	Subtropical Pince Forest	**2.69**
Group 10	Subtropical Dry Evergreen Forest	**0.03**
Group 11	Montane Wet Temperate Forest	**0.69**
Group 12	Himalayan Moist Temperate Forest	**4.12**
Group 13	Himalaya Dry Temperate Forest	**0.84**
Group 14, 15, 16	Sub Alpine and Alpine Forest	**2.55**
	Total	**100.00**

- What type of forests cover the **maximum area** in India? **- Tropical dry deciduous forests**
- How much is the average rainfall in the **tropical evergreen forest** areas? **- More than 200 cm**

The **Botanical Survey of India** (BSI) was established on **13 February 1890** by **Sir George King**.

- Where is **Cinchona tree** found in India? **- Darjeeling**
- Which **tree wood** is used to make **catechu**? **- Well**
- One example of **multipurpose tree** used in **social forestry**– **- Khejri**
- In which year was the **Forest Protection Act** passed in India? **- 1980**
- In what type of forests are **teak** and **sal trees** found? **- Tropical wet deciduous forests**

The **temperate zone** of the **Western Himalayas** is dominated by **deodar trees**.

- Which **species of bamboo** is found mostly in **Chhattisgarh**? **- Lathi Bamboo**
- Where are the forests with **long roots** and **pointed thorns** or **shrubby bushes** and **small trees** commonly found? **- Rajasthan**
- According to the new report of the **United Nations Food and Agriculture Organization**, what is India's rank in largest increase in forest areas at an **annual level**? **- Eighth place**
- Where is the **Bhojpatra tree** found? **- Himalaya**

The tree **Butea Monosperma** is also called **Flame of the Forest**.

- In which state of India are the **teak forests** found? **- Madhya Pradesh**
- Which tree is found at the **highest altitude** above sea level? **- Cedar**
- Who was the pioneer of **Chipko movement**? **- Sunderlal Bahuguna**
- When was the **Forest Survey of India** (FSI) established? **- June 1, 1981**
- How much area is covered by **mangrove vegetation** in India? **- 4,975 sq km** (According to ISFR-2019)

Indian Institute of Forest Management (IIFM) was established in **1972** in **Bhopal** (Madhya Pradesh).

India's Vegetation Regions

S.No.	Regions	Extension	Vegetation Distribution
1.	**Western Himalayan Region**	Kashmir to Kumaon	**1. Temperate Decidous Region :** Pine, Devdar, Coniferous trees **2. Alpine Region :** White Devdar and Evergreen trees
2.	**Eastern Himalayan Region**	Sikkim to Darjelling	**Temperate Region :** Oak, Evergreen trees and Canes.
3.	**Assam Region**	Brahmaputra and Surma Valley	**Evergreen forests** along with Bamboos and tall grasses.
4.	**Indus Plains**	Punjab, Western Rajasthan & Eastern Gujarat Plains	Dry and hot region, mostly **Xerophytic vegetation.**
5.	**Gangetic Plains**	Ganga Yamuna	Cultivation of Rice, Wheat and Sugarcane.
6.	**Deccan Region**	Peninsular Region	Decidious trees along with shrubs.
7.	**Malabar Region**	Coastal Peninsular Region	Plantation Crops, Coconut, Black Pepper, Rubber, Tea, Coffee.
8.	**Andaman Region**	Andaman Islands	Evergreen forests.

India's Major Forestry Research Institutes

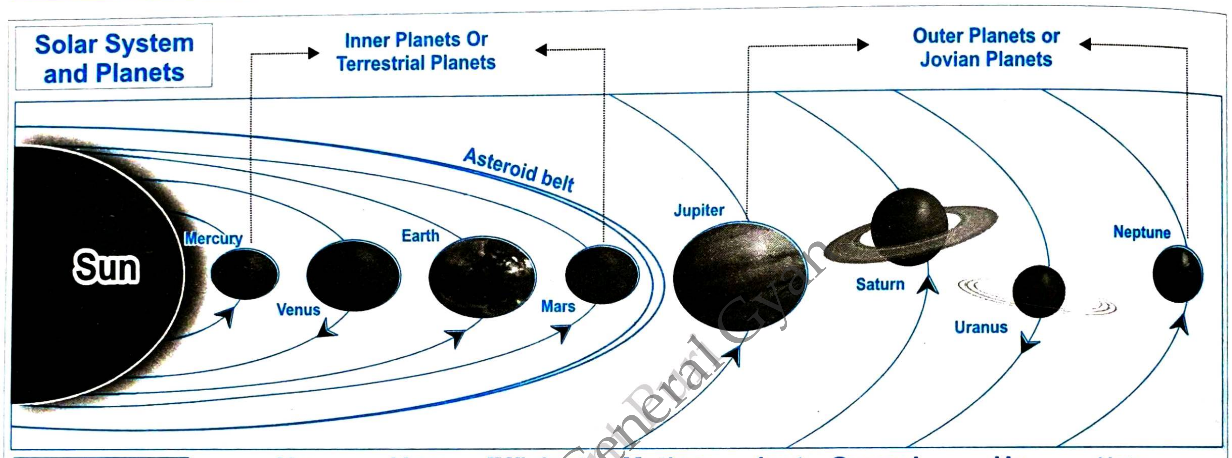
S.No.	Research Institute	Established	Region	State
1.	Forest Research Institute	**1906**	**Dehradun**	Uttarakhand
2.	Arid Forest Research Institute	**1985**	**Jodhpur**	Rajasthan
3.	Institute of wood Science and Technology	**1938**	**Bengaluru**	Karnataka
4.	Rain Forest Research Institute	**1988**	**Jorhat**	Assam
5.	Institute of Forest Genetics and Tree Breeding	**1988**	**Coimbatore**	Tamil Nadu
6.	Center of Social Forestry and Eco Rehabilitation	**1992**	**Prayagraj**	Uttar Pradesh
7.	Himalayan Forest Research Institute	**1977**	**Shimla**	Himachal Pradesh
8.	Advance Center for Bio technology and Mangroove Forests	**1997**	**Hyderabad**	Telangana
9.	Tropical Forest Research Institute	**1988**	**Jabalpur**	Madhya Pradesh
10.	Indian Institute of Forestry Research and Human Resource	**1995**	**Chhindawara**	Madhya Pradesh
11.	Institute of Forest Productivity	**1993**	**Ranchi**	Jharkhand
12.	Indian Plywood Industries Research and Training Institute	**1962**	**Bengaluru**	Karnataka
13.	Indian Institute of Forest Management	**1982**	**Bhopal**	Madhya Pradesh
14.	G.B. Pant Institute of Himalayan Environment and Development	**1988**	**Almora**	Uttarakhand
15.	Jawaharlal Nehru Tropical Botanic Garden and Research Institute	**1979**	**Thiruvananthapuram**	Kerala

The **Chipko movement** (1973) to **save trees** was started in the **Tehri-Garhwal district** of **Uttarakhand**.

World Geography

The Universe and The Solar System

Solar System and Planets


Inner Planets Or Terrestrial Planets
Outer Planets or Jovian Planets
Asteroid belt
Sun
Mercury
Venus
Earth
Mars
Jupiter
Saturn
Uranus
Neptune

Sort by Distance from Sun	My	Very	Efficient	Mother	Just	Served	Us	Nuts
	↓	↓	↓	↓	↓	↓	↓	↓
	Mercury	Venus	Earth	Mars	Jupiter	Saturn	Uranus	Neptune

According to **Big Bang Theory**, about **13.8 billion years ago**, the present **Universe** was in the form of a very dense and **single microscopic body** or **point** with extremely high temperature, called **singularity**. After a **great explosion**, in this body, the **Expansion of Universe** started which continues unabated.

- What does the **Big Bang theory** explain? - **Origin of universe**
- What does the **color of a star** indicate? - **Temperature**
- Which **star** is **closest** to the **Earth**? - **Sun**
- What is the shape of **Milky Way Galaxy**? - **Spiral** (similar to egg)
- Who is called the **Father of Modern Astronomy**? - **Nicolaus Copernicus**
- **The Earth is spherical**, who first said it? - **Pythagoras**
- Which is the **brightest** and **coldest area** of **Milky Way Galaxy**? - **Orion Nebula**
- How do the **age of stars** determine? - **On the basis of Spectrum and Luminosity of stars**

Conceptualisation of Universe

Astronomer	Year	Concept
Claudius Ptolemy (Greek)	140 AD	He started the **systematic study** of the Universe by giving the **Geocentric view** of the **Universe**. He inferred that the **Earth is at the centre of the Universe** and all other celestial bodies revolve around it. This **geocentric view** of the Universe remained predominant viewpoint for a long time.
Nicolaus Copernicus (Poland)	1543 AD	He proposed the **Heliocentric theory**, which stated that **Sun is at the centre of the Universe** instead of the earth. But this view of **Copernicus** was limited to the **Solar system**.
The **Big Bang Theory** was formulated and proposed by **Belgium** astronomer and Cosmologist **Georges Lemaitre**.		

The Sun: Fact File

Minimum distance from the Earth (Perihelion)	–**147 million km** (January 3)
Maximum distance from the Earth (Aphelion)	–**152.1 million km** (July 4)
Average distance from the Earth	– **149.6 million km**
Diameter	– **13,92,000 km**
Volume	– **1.3 million times that of the Earth**
Mass	– **3,32,000 times that of the Earth**
Gravity at the surface	– **28 times that of the Earth**
Density at the centre	– **150 gm/cm³**
Temperature of the photosphere	– **6000°C**
Temperature at the centre	– **15 million°C**
Temperature of the Sun-spots	– **1500°C**
Energy dissipation	– **10^{26} joules/second**
Pressure at the centre	– **10^9 atm**
Rotational time period	– **25.38 days** (relative to the equator); **35 days** (relative to the poles)
Composition	– **Hydrogen** (71%), **Helium** (26.5%) **and** others (2.5%)
Age	– **5 billion years** (approx)
Lifetime/span of an average star	– **10 billion years**
Speed of Sun rays	– **3×10^8 m/s** (3 lakh kilometer/ second)

♦ How long does the **sun** take to **revolve around** the **center** of **our galaxy**? - **Around 250 million years**

♦ By which process the **energy of the sun** is generated? - **Nuclear fusion**

All substances present in the center of the **Sun** are found in the state of **gas** and **plasma** due to extremely high **temperature** (about 15 million degrees centigrade).

♦ What is the distance of the **star Proxima Century**, which is closest to the **Sun**? - **4.24 light years**

♦ At what speed does the **Earth revolve** around the **Sun**? - **29.9 km/sec**

♦ How many **constellations** are there in the **sky**? - **88**

The movement of a planet on its **axis** is called **rotation** and the movement **around** the **sun** is called **revolution**.

♦ What causes **day** and **night** on Earth? - **Due to the rotation of the Earth on its orbit**

♦ What is a **Planet**? - **Lightless bodies that are illuminated by sunlight**

♦ **Earth** is situated between which two **planets**? - **Venus and Mars**

Planets according to their decreasing size			
1. Jupiter	2. Saturn	3. Uranus	4. Neptune
5. Earth	6. Venus	7. Mars	8. Mercury

Planets according to their decreasing mass			
1. Jupiter	2. Saturn	3. Neptune	4. Uranus
5. Earth	6. Venus	7. Mars	8. Mercury

Planets according to their decreasing density			
1. Earth	2. Mercury	3. Venus	4. Mars
5. Neptune	6. Jupiter	7. Uranus	8. Saturn

Terrestrial Planets			
1. Mercury	2. Venus	3. Earth	4. Mars

Jovian Planets			
1. Jupiter	2. Saturn	3. Uranus	4. Neptune

Planets according to decreasing revolution period			
1. Mercury	2. Venus	3. Earth	4. Mars
5. Jupiter	6. Saturn	7. Uranus	8. Neptune

Planets according to decreasing revolution velocity			
1. Mercury	2. Venus	3. Earth	4. Mars
5. Jupiter	6. Saturn	7. Uranus	8. Neptune

♦ Which was the first Spacecraft to visit the **Solar System**? - **Pioneer 10 and Pioneer 11**

♦ Which mission is a part of **NASA's Mars Exploration Program**, a long-term effort of robotic exploration of the Red Planet ? - **Mars 2020**

Perseverance Rover mission has launched on **July 30, 2020.** It will search for signs of ancient microbial life and test new technology to benefit future **robotic & human exploration** of Mars.

♦ Which planet is also known as **Earth's Twin**? - **Venus**

99.86% mass of our **solar system** is contained in the **Sun**.

The Earth: Fact File

Shape	- **Geoid**
Polar diameter	- **12,714 km**
Equatorial diameter	- **12,756 km**
Polar perimeter	- **40,008 km**
Equatorial perimeter	- **40,075 km**
Mass	- **5.97×10^{24} tonnes**
Water surface	- **71%**
Land surface	- **29%**
Volume	- **10.83×10^{11} km^3**
Average Relative Density	- **5.52 g/cm^3** (with respect to the density of water)
Age (estimated)	- **4.6 billion years**
Surface area	- **511 million km^2**
Rotation time	- **23 hours 56 min 4 sec**
Revolution time	- **365 days 5 hours 48 min 46 sec**
Revolution velocity	- **29.8 km/sec**
Length of the orbit	- **960 million km**
Minimum distance from the Sun(Perihelion)	- **147.9 million km**
Maximum distance from the Sun (Aphelion)	- **152.1 million km**
Average distance from the Sun	- **149.8 million km**
Time taken by the light of the Sun to reach earth	- **8 min 18 sec**
Distance from the Moon	- **3,84,000 km**
Deepest point	- **Mariana Trench** (11,033 m deep from the mean sea level)
Highest point from Sea level	- **8849 m** (Mt. Everest)

- Which major gases are found on **Jupiter** and **Saturn**?
  - **Hydrogen, Helium and Methane**
- When can the view of the **diamond ring** be observed?
  - **At the circumference of the sun at the time of full solar eclipse**

If the distance between the **Sun** and **Earth** is reduced to one fourth, then the **duration of our year** will be **1/8** (45-46 days).

- Which of the **two planets** have **no satellite**?
  - **Mercury and Venus**
- When the duration of **day and night** are **equal**, the rays of the **sun fall**? - **At the equator**
- What is **hell-bop** or **heli**? - **Comet**

Important facts related to Planets

Nearest planet to sun	**Mercury**
Nearest planet to Earth	**Venus**
Hottest planet	**Venus**
Farthest planet from Sun	**Neptune**
Largest planet	**Jupitar**
Smallest planet	**Mercury**
Densest planet	**Earth**
Most Shiny planet	**Venus**
Red planet	**Mars**
Morning star	**Venus**
Evening star	**Venus**
Earth's twin planet	**Venus**
Planets with rings	**Jupiter, Saturn, Uranus, Neptune**
Planet with longest year	**Neptune**
Planet with shortest year	**Mercury**
Planet with largest range of temperature	**Mercury**
Planet with maximum stars	**Saturn**
Green Planet (colour)	**Uranus**
Planet with highest rotation speed	**Jupitar**
Planet with lowest rotation speed	**Venus**
Planet with equal rotational & revolutional speed	**Venus**
Planet with same day duration as of earth	**Mars**
Planet with equal inclination angle as earth	**Mars**
Planet with equal rotation duration as earth	**Mars**
Planets rotating towards west	**Venus & Uranus**
Planet rotating from North to South	**Uranus**
Planet with highest revolution speed	**Mecury**
Planet with minimum revolution speed	**Neptune**
Planets where Sunrises in the west	**Venus & Uranus**

The **North Pole** was discovered by **Robert Pierre** and the **South Pole** was discovered by the **Roald Amundsen.**

- Due to existance of life, the **Earth** is also known by which **other name**? **- Green Planet**
- The **rings of Jupiter** is made from which material? **- Silicate**
- When there are **two full moons** in a **month**, what is the name of the **second full moon**? **- Blue Moon**
- Titan is the **largest satellite** of which **Planet**? **- Saturn**
- Approximately how long does it take for **Uranus** to make **one revolution** of the **sun**? **- 84 years**

Saturn takes about **29.5 years** to complete one **orbit** of the **Sun**.

- Who is the **twin star** of **Sun**? **- Nemesis**
- Which **planet's day value** and its **axis tilt** is almost equivalent to the **Earth**? **- Mars**
- In **1610**, which **scientist** discovered the satellites of **Jupiter** in **India**? **- Galileo**
- Which of the **Planets** have **rings around** them? **- Jupiter, Saturn, Uranus and Neptune**
- Which is the **largest** and **brightest asteroid**? **- Ceres**
- Which is the **second largest satellite** of the **solar family**? **- Titan**

The **complete solar eclipse** is visible only in a **limited terrain**, because the **size** of the **moon's shadow** is **smaller** than the **transverse passage** of the **Earth**.

- What is the temperature of the **Sun's photosphere**? **- 4500K-6000K**
- When does the **lunar eclipse** occur? **- only on full moon**
- The **Ocean of piece** is found on which **Satellite**?**- Moon**

Gaganyaan

- It is India's proposed **Human Space Flight Programme** scheduled for **2022**, conceived in **2004** by ISRO, but got delayed to execute owing to the **GSLV technology**.
- The spacecraft will be using **GSLV MKIII** launch vehicle and is expected to be placed in a Low Earth orbit of **300-400 km**. The crew will explore the outer space for the next **5-7 days** making India the **fourth country** to achieve the feat post **USSR, USA** and **China**.

The **presence** of **ice sheets** and **snowy water** is the most favorable condition for the **presence of life** on **Mars**.

- Why can't **two people listen** to each other on the **surface** of the **moon**? **- Due to the lack of atmosphere on the moon**
- When it is **half moon**, what is the **angle** among the **sun**, the **earth** and the **moon**? **- 90 degrees**
- **Black Hole** is a body in space, which does not **allow** any **type** of **radiation** to come out. What is the reason for this? **- Highest density**

When an object is taken from the **earth** to the **moon**, its **weight decreases** to **1/6**.

- Which **celestial phenomenon** is responsible for the **destruction of stars**? **- Black Hole**
- Who propounded **Black Hole theory**? **- S. Chandrashekhar**
- Which is the **brightest star**? **- Sirius or Dogstar**
- When does **solar eclipse** occur? **- On new moon day only**
- What is called a **group of stars** arranged in a certain shape? **- Asterism**
- Which is the **farthest star** in the **Universe**? **- Icarus**
- What is the **unit** to find distance between **stars**? **- Light years**

The **ball dropped** out of the **Earth's orbiting** artificial satellite will rotate in its orbit with the same period of time as the **Earth's orbiting satellite**.

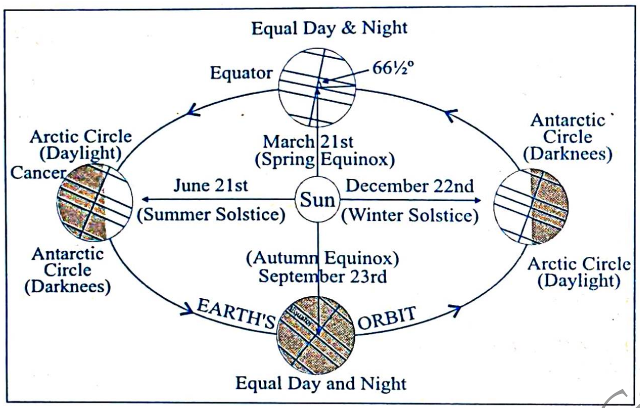
- Which constellations do **pole stars/north stars** signify? **- Seven board constellations**
- What is the **celestial body** called, **orbiting** the **sun** between the **orbits** of **Mars** and **Jupiter**? **- Asteroids**
- What is a **Meteor** called? **- Shooting Star**
- **Phobos** and **Deimos** are whose **satellites**? **- Mars**

Planet	No. of Satellites	Planet	No. of Satellites
Earth	1	Saturn	82
Mars	2	Uranus	27
Jupitar	79	Neptune	14

In the year **1985**, the **ozone hole** was discovered by **Brian Gardiner, Joe Farman,** and **Jonathan Shanklin**.

Movement of the Earth and The Latitude and Longitude

- **Day** and **night** are **equal** in **equinox** all over the world, what are those dates? **- 21 March and 23 September**
- At which place are the **nights and days equal** throughout the year? **- Equator**
- At which place in the **Northern Hemisphere** will there be a **12-hour day** at the time of **Summer Solstice**? **- Equator**


Equal Day & Night
Equator
66½°
Arctic Circle
(Daylight)
Cancer
March 21st
(Spring Equinox)
Antarctic Circle
(Darknees)
June 21st
(Summer Solstice)
Sun
December 22nd
(Winter Solstice)
Antarctic Circle
(Darknees)
(Autumn Equinox)
September 23rd
Arctic Circle
(Daylight)
EARTH'S ORBIT
Equal Day and Night

- What is the **angle** of inclination of the **earth** on its **axis**? - $23\frac{1}{2}$
- On which date is the **shortest day** of the year in the **Northern Hemisphere**? **- December 22**
- Which is the **largest day** in the **Northern Hemisphere**? **- 21 June**

The **rotation** of the **Earth around** the **Sun** and **tilting** on its axis is considered to be the main cause of **climate change**.

- How many **kilometers** are represented by **1°** of **latitude**? **- 111 km**

Perihelion (3 January)

Perihelion is the point of the Earth's orbit that is nearest to the Sun. It is **winter** in the **Northern Hemisphere**, when the Earth is at the perihelion.

Aphelion (4 July)

Aphelion is the point of the Earth's orbit that is farthest away from the Sun. Earth experiences **summers** in the **Northern Hemisphere** when the earth is at **Aphelion**.

- On which date your **shadow** will be the smallest in the afternoon? **- 21 June**
- At what **latitude** is the **annual range** of **temperature minimum**? **- Equator** (0°)
- Where is the point of intersection of the **Prime Meridian** and **Equator**? **- Atlantic Ocean**

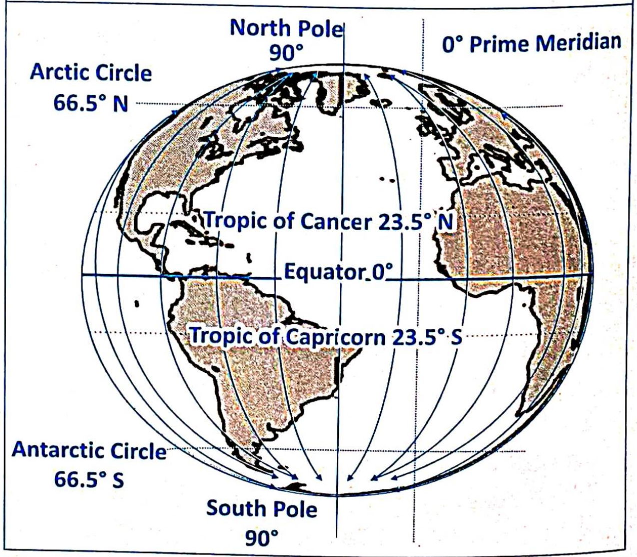
The intersection of **zero degree latitude** and **zero degree longitude** is located in the **Atlantic Ocean**.

- The **first ray** of **sunrise** is seen at which **meridian** in **India**? **- 97° 25'**
- The **International Date Line** passes through which **Ocean**? **- Pacific Ocean**
- What is the **total length** of the **Earth's equator**? **- 40075 km**

The minimum distance between **two places** on the **globe** is along **Prime Meridian**.

- Which **longitude line** along with the **principal meridian** forms **large circle** on the **globe**? **- 180 degree longitude**
- Which **Strait** is located closest to the **International Date Line**? **- Bering Strait**

Important Planetary Lines


North Pole
90°
0° Prime Meridian
Arctic Circle
66.5° N
Tropic of Cancer 23.5° N
Equator 0°
Tropic of Capricorn 23.5° S
Antarctic Circle
66.5° S
South Pole
90°

The **latitudinal belt** between **0-5 degree north** and **south** is known as the **Quiet latitude**.

Countries lying on Prime Meridian

1.	UK	**2.**	France	**3.**	Spain
4.	Algeria	**5.**	Mali	**6.**	Burkina Faso
7.	Togo	**8.**	Ghana		

Countries lying on Equator

1.	Ecuador	**2.**	Colombia
3.	Brazil	**4.**	Sao Tome & Principe
5.	Gabon	**6.**	Republic of Congo
7.	Democratic Republic of Congo		
8.	Uganda	**9.**	Kenya
10.	Somalia	**11.**	Maldives
12.	Indonesia	**13.**	Kiribati

Countries lying on the Tropic of Cancer

1.	Mexico	**2.**	Bahamas	**3.**	Niger
4.	Algeria	**5.**	Mauritania	**6.**	Egypt
7.	Libya	**8.**	Mali	**9.**	Western Sahara
10.	Myanmar	**11.**	Oman	**12.**	UAE
13.	India	**14.**	Bangladesh	**15.**	China
16.	Taiwan				

Countries lying on the Tropic of Capricorn

1.	Argentina	**2.**	Brazil
3.	Chile	**4.**	Paraguay
5.	Namibia	**6.**	Botswana
7.	South Africa	**8.**	Mozambique
9.	Madagascar	**10.**	Australia

- If there is a difference of **90 degree longitude** in **two places**, then how **many hours difference** will be between them? **- 6 hours [1° = 4 minutes]**
- Which latitudes are called the **horse latitude**? **- 30-35 degree latitude**
- The local time of **Egypt's capital Cairo** is **two hours** ahead of **Greenwich**, at which longitude is it located? **- 30 degrees east longitude**
- What is the **International Date line**? **- 180° longitude**
- When it is **mid-day** at **$82\frac{1}{2}$° E longitude**, on which **longitude line** will it be **7:30 AM**? **- 0 ° longitude**
- The **Equator**, the **Tropic of Cancer** and the **Tropic of Capricorn** passes through which **continent**? **- Africa**
- **Earth has originated from dust particles of gases**, who said these lines? **- O. Schmidt**
- Which **method** is used to determine the **age of the Earth**? **- Uranium dating method**
- The origin of **life on Earth** is based on fossil evidence of how many years ago? **- 3.5 million years ago**

If there is **6.00 AM** in the **morning** at a place and 3.00 AM at **Greenwich mean** at the same time, then the **longitude line** of that place will be **45 degrees East**.

- The **world divided** into how many **time zones**? **- 24 time zones**

International Standard Time (IST) is determined by **0° Prime Meridian** (Greenwich Meantime). It passes through :

1.	UK	**2.**	France	**3.**	Spain
4.	Algeria	**5.**	Mali	**6.**	Burkina Faso
7.	Togo	**8.**	Ghana	**9.**	Antarctica

- What is an **imaginary circle** drawn at an **angular distance** of **$66\frac{1}{2}$°** from the **equator** in the **Northern Hemisphere** on the globe? **- Tropic of Arctic**

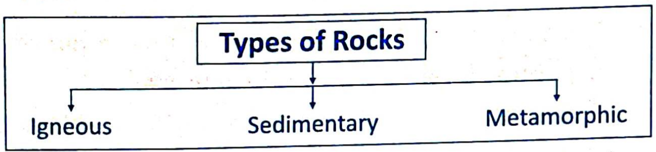
France has the maximum **Time Zones** (12) followed by **Russia** (11).

- What is the **total number** of **latitudes** including the **equatorial line**? **- 181** (90+1+90)

Scottish-Canadian Sir Sandford Fleming proposed a worldwide system of time zones in **1879**. Eventually in **1884 International meridian** conference adopted a **24 hour day**. As Earth turns by **15° around** its **axis**, time changes by one hour; a **360°-degree** rotation yields **24 hours**. As a result, the world is divided into **24 time zones** shifted by one hour each.

There is a **distance** of **111.32 km** between **two longitudes** at an interval of **1 degree** at the **equator**.

Rocks and Volcano


Types of Rocks
Igneous
Sedimentary
Metamorphic

- ♦ Which are **fossil free rocks?** - **Igneous Rocks**
- ♦ **Black rocks** are formed by **erosion** of which rocks? - **Igneous Rocks**
- ♦ What **percentage** of the entire **crust** is **sedimentary** rocks extensively? - **About 75%**
- ♦ From which **rocks** do **metamorphic rocks** originate? - **Both igneous and sedimentary rocks**
- ♦ Which rock is an example of **Sangmarmar** (marble)? - **Metamorphic rock**

Metamorphic rocks formed through the **Sedimentary rocks.** (Meta-Sedimentary or Para-Metamorphic Rocks).		
• **Slate**	–	from Shale
• **Marble**	–	from Limestone
• **Quartzite**	–	from Sandstone & Conglomerate
• **Marble**	–	from Chalk & Dolomite
Metamorphic rocks formed through the **Igneous rocks.** (Meta = Igneous or Ortho-Meta–morphic rocks)		
• **Gneisses**	–	from Granites
• **Amphibolites**	–	from Basalt
• **Schist**	–	from Basalt
Metamorphic rocks formed by the further metamorphosis of **Metamorphic rocks.**		
• **Phyllite**	–	from Slate
• **Schist**	–	from Phyllite
• **Serpentine**	–	from Gabbro

Four major elements contributing in the formation of rocks are - **Oxygen** (46.8%), **Silicon** (27.72%), **Aluminum** (8.13%), **Iron** (5.00%), **Calcium** (3.63%), **Sodium** (2.83%), **Potassium** (2.59%), and **magnesium** (2.09%).

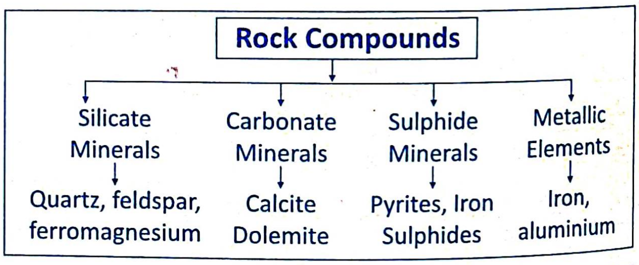
- ♦ What is **molten material** called inside the **Earth** called? - **Magma**
- ♦ Which are the **hardest rocks?** - **Metamorphic rocks**
- ♦ Which rock is formed by the **solidification** of **lava** in the **inner part** of the earth? - **Plutonic rocks**
- ♦ In which country is the **Ojos del Salado** volcano located? - **Argentina and Chile**

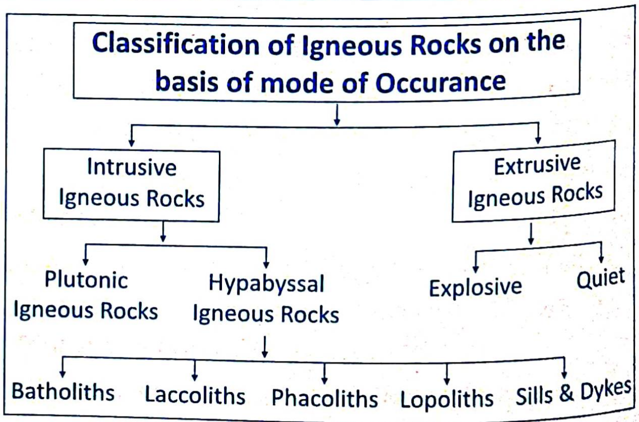
The most common volcanic gas produced in volcanic activity water vapour. In addition, gases like **Carbon Dioxide** (CO_2), **Sulfur Dioxide** (SO_2), **Nitrogen** (N_2) and **Hydrogen** (H_2) are released.

- ♦ How many **types of volcanoes** are there based on activity? - **Three**

1. Active Volcano
2. Extinct volcano
3. Dormant volcano

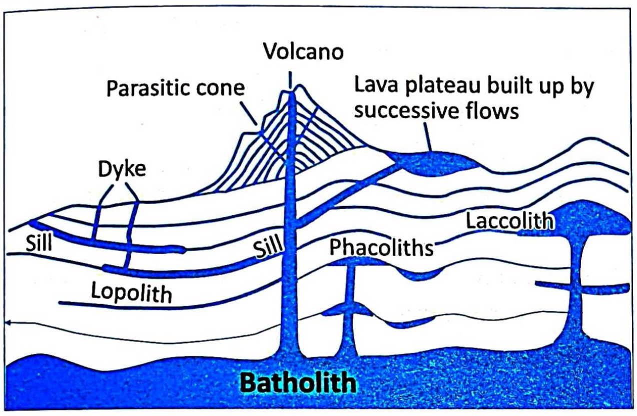
- ♦ **Volcanoes** that have not been **active** for a **long time**, but can become active at any time in the future, what are they called? - **Dormant volcano**
- ♦ Which **type of lava** contains **high amount** of **silica?** - **Acidic lava**
- ♦ Which type of volcano is **Mount Kilimanjaro?** - **Extinct volcano**
- ♦ What type of volcano is located on the **Narcondam island** of **Andaman and Nicobar?** - **Dormant volcano**


Rock Compounds
Silicate Minerals
Quartz, feldspar, ferromagnesium
Carbonate Minerals
Calcite Dolemite
Sulphide Minerals
Pyrites, Iron Sulphides
Metallic Elements
Iron, aluminium


Classification of Igneous Rocks on the basis of mode of Occurance
Intrusive Igneous Rocks
Extrusive Igneous Rocks
Plutonic Igneous Rocks
Hypabyssal Igneous Rocks
Explosive
Quiet
Batholiths
Laccoliths
Phacoliths
Lopoliths
Sills & Dykes

Metamorphic rocks are formed by the **composition** of **igneous** and **sedimentary rocks.**

Gravel type	Gravel size (mm)
Boulder	> 256
Cobble	256–64
Pebble	64–4
Granule	4–2
Silt	0.0312 –0.004
Clay	0.004–0.00012



The largest volcano known so far in our **solar system** is **Olympus Mons**, which is located on **Mars**.

- Which volcano is called the **Light House** of the **Mediterranean Sea**? - **Mount Stromboli**
- Where is the volcanic mountain **Mount Saint Helens** located? - **United States**
- In which country is **Mount Kilimanjaro**, the **highest mountain peak** of the **Africa** continent **located**? - **Tanzania**
- **Mauna Loa** is an **active volcano**, where is it located? - **Hawaiian Islands** (United States)
- Which is the only **active volcano** in **Antarctica**? - **Mount Erebus**
- Which are the **two dead volcanoes** of **Iran**? - **Deoband and Koh Sultan**

The **Eurasian Plate, African Plate** and **Indian Plate** come under the **mid continental volcano belt**.

- What is about - **shaped depression** found at the **top of a volcano** called? - **Crater**

Active Volcanoes on Earth

Volcano	Country	Height (m)
• **Cotopaxi**	Equador	5,897
• **Klyuchevskaya**	Russia	4,688
• **Wrangel**	Alaska (USA)	4,317
• **Cameroon**	Cameroon (Africa)	4,070
• **Erebus**	Antarctica	3,795
• **Nyriagongo**	DRC (Congo)	3,470
• **Iliamna**	Aletuian range (USA)	3,053
• **Etna**	Sisily (Italy)	3,340
• **Mt. Baker**	Cascate range (USA)	3,285
• **Chillan**	Chile	3,200
• **Nyamuragira**	Congo	3,090
• **Villarrica**	Chile	2,842
• **Ruapehu**	New Zealand	2,797
• **Porak**	Armenia-Azerbaizan	2,800
• **Asama**	Japan	2,540
• **St. Helens**	USA	2,530
• **Ngauruhoe**	New Zealand	2,291
• **Hekla**	Iceland	1,491
• **Vesuvius**	Gulf of Naples (Italy)	1,277
• **Kilauea**	Hawaii (USA)	1,225
• **Stromboli**	Lipari Island (Italy)	925

- **Rainier**, **Hood** and **Shasta** of the **United States** are examples of which volcanic category? - **Mixed volcanic cones**
- Which is the **world's highest active volcano**? - **Cotopaxi**
- How many major **volcanic belts** are there? - **Four**

Major Volcanic Belts

1. Circum Pacific Belt
2. Mid-continental Belt
3. Mid-Atlantic Ridge
4. Intraplate Volcanism

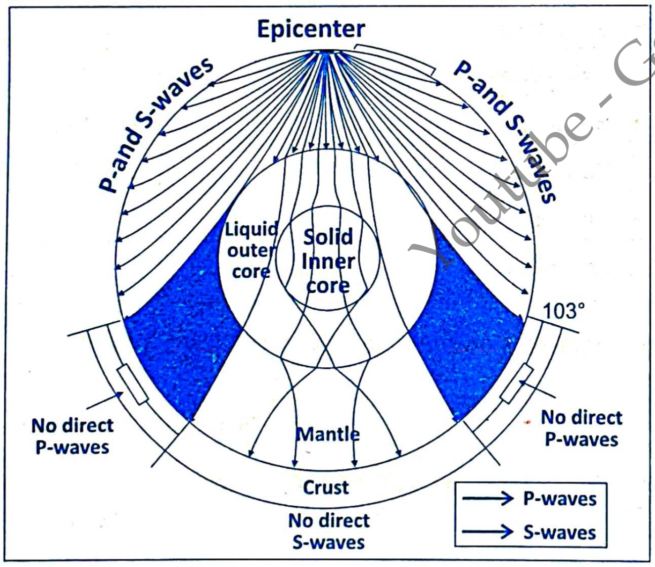
- **Alkaline lava cone** is also known as? - **Shield cone**

The **Katmai Mountains** of **Alaska** (United States) are called the **Valley** of the **Ten Thousand Smokers**.

Earthquake and Tsunami

Earthquakes

- **Natural**
  - **Volcanic earthquake**: Earthquake caused due to volcanic eruptions of **explosive** and **fissure types**
  - **Tectonic earthquake**: Due to dislocation of rock blocks during faulting
  - **Isostatic earthquakes**: Imbalance in Regional geological processes especially in Active zones
  - **Plutonic earthquakes**: Deep focus earthquakes occuring at greater depths ranging from 240 km to 670 km
- **Anthropogenic**: Caused due to human activities as **drilling** or **mining** for **water** or **mineral resources, construction activities** and use of **dynamite explosions**, storage of enormous volume of water in **dams** and **reservoirs**



◆ What is **average density** of the **Earth**?

- 5.517 g cm^{-3}

◆ By what other name are **S-waves** known?

- Transverse or secondary waves

◆ When did **India** introduce the world's most **modern tsunami** warning system? **- October, 2007**

L-waves (surface waves - surface and long-period waves) have the **lowest speed** but the **highest intensity**, while the **P-waves** have the **highest** speed and **lowest intensity**.

◆ Where was the **Indian National Ocean Information Service Center** (INCOIS) established?

- Hyderabad, Telangana

The instrument measuring the intensity of **seismic waves** is called **seismograph** or **seismograph**.

Scales of earthquake measurement -

1. **Rossi-Forel Scale :** On this scale **1–11 measurements** are placed.
2. **Mercalli Scale :** This is an **experience-based scale.** It has **1-12 measurements.**
3. **Richter scale :** It is a **logarithmic scale**, with intensity ranging from **0 to 10** and each next unit on the Richter scale expresses **10 times** more intensity than the previous unit.

◆ Where are **seismic waves** first experienced?

- Epicenter

◆ Which place is called the **earthquake capital** of the world? **- Perkfield, California**

World Distribution of Earthquakes

Circum Pacific Belt

- **Epicentres** of the **coastal margins** of **North** and **South America** and **East Asia** representing **eastern** and **western** margins of **Pacific Ocean.**
- This belt accounts for **65%** of the total earthquakes of the world.

Mid Continental Belt

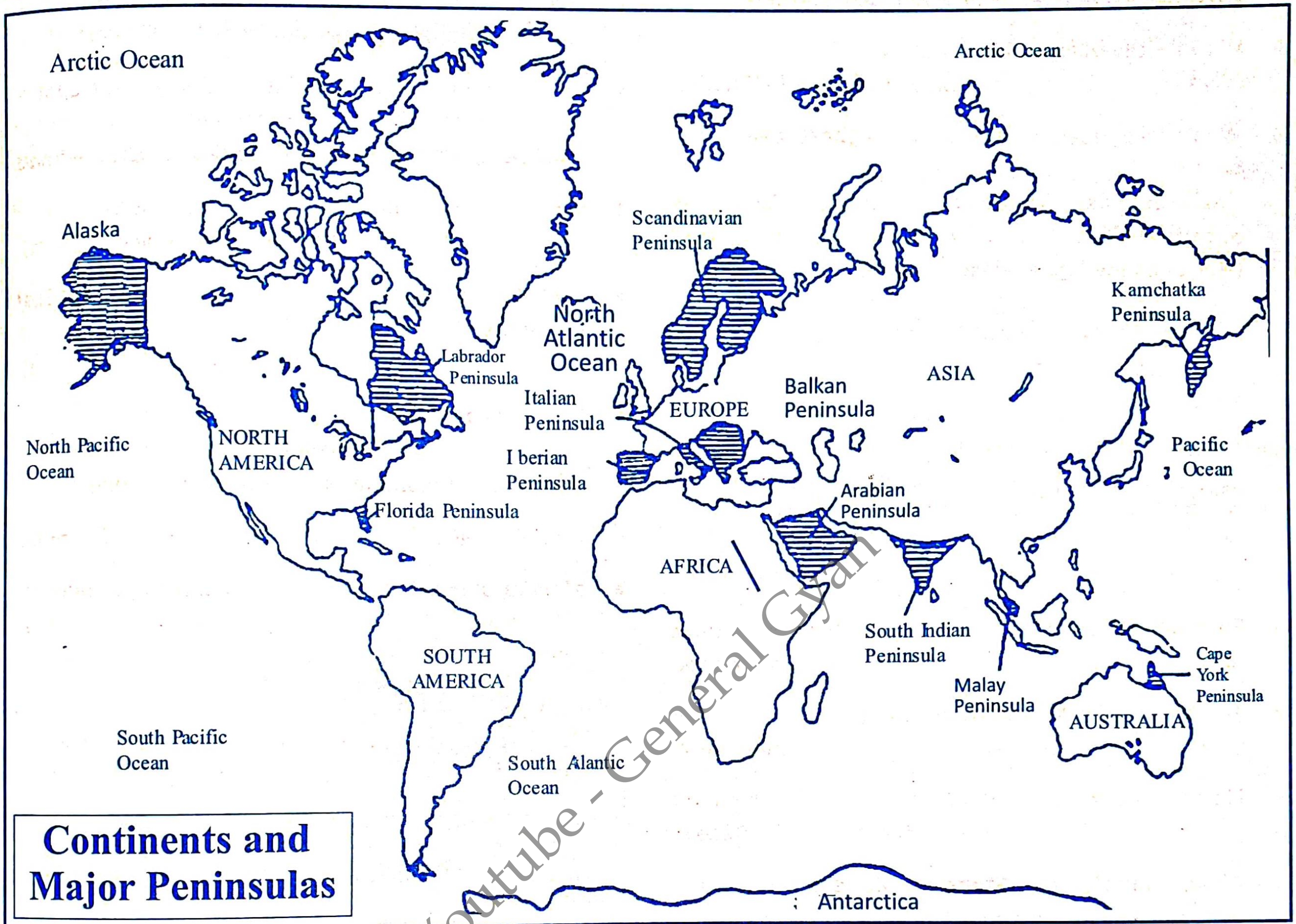
- **Mediterranean belt** or **Alpine Himalayan Belt.**
- About **21%** of total **seismic events** of the world are recorded in this belt.
- It includes epicentres of **Alpine mountains** and it's offshoots in **Europe, Mediterranean sea, North Africa, Himalayas** and **Burmese Hills.**

Mid Atlantic Ridge

- Extends from Iceland in the north to Bouvet Island in the south.
- Low frequency earthquakes.

Waves can move in **solid** as well as in **liquid medium**, but its speed is slow in liquid medium as compared to solid.

The Continents


Arctic Ocean
Arctic Ocean
Alaska
Scandinavian Peninsula
Kamchatka Peninsula
North Atlantic Ocean
Labrador Peninsula
Italian Peninsula
EUROPE
Balkan Peninsula
ASIA
North Pacific Ocean
NORTH AMERICA
Iberian Peninsula
Pacific Ocean
Arabian Peninsula
Florida Peninsula
AFRICA
South Indian Peninsula
SOUTH AMERICA
Cape York Peninsula
Malay Peninsula
AUSTRALIA
South Pacific Ocean
South Alantic Ocean
Antarctica

Continents and Major Peninsulas

- In terms of area, what is the **descending sequence** of continents? - **Asia, Africa, North America, South America, Antarctica, Europe and Australia**
- Which is the **hottest place** in **Asia**? - **Tirat Zvi, Israel** (about 54° C)

Asia is the world's **largest continent** both in terms of **area** and **population**.

- In which continent **Death Valley, world's hottest place** lies? - **North America**
- Which canal separates **South America** and **North America**? - **Panama Canal**
- How did **continents separated** from each other? - **By plate tectonic action**
- Which Countries are collectively known as **Central Asian Countries**? - **Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan and Uzbekistan**
- Which continent has the highest average elevation? - **South** (Antartica) **Pole**
- Which **continent** has the least **landmass**? - **Australia**
- Which is the **first Asian country** to orbit mars? - **India**
- Which is the **smallest continent** of the **Northern Hemisphere**? - **Europe**

Equinoxes, **Cancer** and **Capricorn lines pass** through the **continent of Africa**.

- Which continent has the **highest per capita land** availability? - **Australia**

The **islands of Australia**, **New Zealand**, **Melanesia**, **Micronesia** and **Polynesia** are jointly called **Oceania**.

◆ In how many **physical divisions** is **Asia** divided?

- 5 : Northern lowlands, Central mountains, Southern plateaus, Great river valleys and Island groups

◆ Which is the **deepest lake** of the **world**?

- Lake Baikal, Siberia (Russia)

◆ Which lake recently became the **highest lake** in the world?

- **Kajin Sara Lake** (located at an altitude of 5200m) **is soon to replace Tilicho Lake** (4919m) **Manang district** (Nepal) **as the highest lake of world**

People's Republic of China

- (22) Provinces + Taiwan/Republic of China
- (5) Autonomous Regions
- (4) Directly Controlled Municipalities
- (2) Self governing special administrative regions : Macau and Hong Kong

◆ **Sulaiman range** forms a part of which **Asian mountains knot?** **- Pamir Knot**

◆ **Taurus** and **Zagros mountain ranges** form a part of which Asian mountain knot? **- Armenian Knot**

◆ **Elbrus** and **Zagros** mountains converge at which point ? **- Mount Ararat** (Turkey)

◆ **Altai, Yabnoloi** and **Stanovoy Ranges** are located between which mountain ranges?

- Tien Shan mountains in the west and mountain chains of North East Siberia

◆ **Sumatra** and **Java islands** have developed a **fertile soil** owing to which **geological feature?**

- Volcanic eruptions

◆ Which is the coldest place in the **Northern hemisphere**?

- Verkhoyansk in northeast Siberia (Russia)

◆ **Temperate grasslands** found in south of **Taiga** are also known as? **- Steppes**

◆ Jute is mainly grown in the **fertile soil plains** of which river basin? **- Ganga Brahmaputra delta**

◆ **Khyber Pass** and **Bolan pass** are the prominent passes located in which country? - **Both are located in Hindu Kush and Kirthar ranges of Pakistan respectively** (Pakhtunkhwa province)

◆ **Potwar Plateau** located to the south of **Hindukush range** is geographically in which country? **- Pakistan**

◆ The highest peak of the world **Mount Everest** (8849 m), located in **Nepal** is locally known as? **- Sagarmatha**

◆ Recently which region of **India** was claimed by **Nepal** in its political maps?

- Kalapani, Limpiyadhura and Lipulekh of Uttarakhand

◆ **Gangkhar Puensum** is located in which country?

- Bhutan (highest peak, 7561m)

◆ **Gulf of Martaban** is located in the **geographical proximity** of which country?

- Myanmar (South East coast)

◆ Which **Asian country** recently regarded rights of river as a living entity? **- Bangladesh** (Becoming the fourth nation after Colombia, New Zealand and India)

◆ **Adam's peak** is located in which country? **- Sri Lanka**

◆ **Malaku Islands** belong to which **archipelago country**?

- Indonesia

Major Islands of Indonesia

- Sunda Islands
  - Greater Sunda
  - Lesser Sunda
  - Sumatra
  - Java
  - Borneo
  - Sulawesi
- Maluku Islands
  - Moluccas
- New Guinea
  - Papua
  - West papua
  - Papua New Guinea

◆ **Sulawesi** belongs to which island group of **Indonesian archipelago?** **- Sunda Islands**

◆ Which sea lies between **Philippines** and **Sulawesi?**

- Celebes Sea

◆ **South China** sea is politically disputed among which countries?

- China, Brunei, Malaysia, Philippines, Taiwan and Vietnam

Malaysia

- Peninsular Malaysia
  West Malaysia
  (on Malay Peninsula as a Indo-China Peninsular extension)
- Malaysia Timur
  East Malaysia
  (located on island of Borneo)

Golan Heights, a rocky **Plateau** (1800km square) is located on the border between **Syria** and **Israel.**

- **Spartly Islands** are politically disputed among which countries?
  - China, Taiwan, Vietnam, the Philippines, and Malaysia
- **Mount Agung, Mount Bromo** and **Mount Merapi** are located in which country? **- Indonesia**
- The capital of **Japan - Tokyo** is located on which island ? **- Honshu**
- **Lake Biwa** is located in which country? **- Honshu Island, Japan**

Four Major Islands of Japan

- Hokkaido
- Honshu
- Shikoku
- Kyushu

- **Saudi Arabia** is separated from **Israel** and **Egypt** by which geological body? - Gulf of Aqaba
- **Rub al Khali**, a sand desert is located in which country? **- Saudi Arabia**
- **Shamal**, a hot dust laden wind blows in the **spring** and **summer period** through which country? **- Yemen**
- A controversial exit visa system called **Kafala** was abolished by which **Asian country** in **January 2020**? **- Qatar**
- An ancient channel irrigation mechanism known as **Alfaz**, also designated a **World Heritage** site in **2006** is associated with which country? **- Oman**
- **Dasht e Kabir**, a sandstone and salty desert is located in which country? **- Iran**
- **Tigris** and **Euphrates** that drain through **Iraq** by which **geographical feature** it divides before falling into the **Persian Gulf**? **- Shatt al Arab**
- **Lake Asad**, a man made reservoir is constructed on which river? **- Euphrates**

Europe is known as **peninsula of Peninsula** and **Peninsula of Eurasia**.

- **Fjord**, a deep **Glacier** trough filled with **sea water** Is a **typical geological** feature of which continent? **- Europe**
- Which is the **highest peak** of **Europe**? **- Mount Elbrus, Caucasus range** (Russia)
- **Loire valley**, a region famous for **local wines** and **historic towns** is located in which country? **- France**
- Rhine river flowing through **Germany, France** and **Netherlands drains** into which **water body**? **- North Sea**

Ruhr Basin is called the **Black region** of **Germany** and **Industrial heartland** of **Europe**. **Saar basin** of **Germany** is a **coal mining region**.

- Which rivers are shared between **Spain** and **Portugal**? **- Douru and Tagus rivers**
- Which rivers drain into the **Black Sea**? **- Dnieper, Dniester, Don and Danube**
- Which river is known as **Ganges of Italy**? **- Poe river**
- **Franchthi caves** are located in which country? **- Greece**
- Which are the enclaved countries in **Europe**? **- Vatican City State and San Marino, both enclaved by Italy**
- Which **European country** is known as the **land of Farmers**? **- France**
- **Bordeaux region** of **France** is famous for what? **- Wine production**

Geographical Groupings of Europe

- Scandanavian Countries
  - Norway
  - Iceland
  - Sweden
  - Denmark
- Balkan States
  - Yugoslavia
  - Romania
  - Greece
  - Albania
- British Isles
  - Great Britain
  - Ireland
  - Channel Islands
- Iberian Peninsula
  - Spain
  - Portugal
- Baltic States
  - Estonia
  - Latvia
  - Lithunia

Ostrich, a **large fastest** running **bird** is found in **Kalahari Desert** of **Africa**.

Black forest and **Harz mountains** of **Germany** are striking examples of **Horst Mountains**. The **Rhine rift valley** is located between the two.

- ♦ Which water body separates **Britain** from mainland **Europe**? **- English Channel**

Countries	**Capitals**
England	(London)
Wales	(Cardiff)
Scotland	(Edinburgh)
North Ireland	(Belfast)

England, Wales, Scotland → Great Britain → United Kingdom
North Ireland → United Kingdom
United Kingdom → British Isles
Island groups → British Isles

Ireland and **Great Britain** altogether with **smaller islands** are collectively known as **British Isles**.

- ♦ **Prime meridian** passes through which **European countries**? **- England, France and Spain**
- ♦ **Dogger bank**, an important **fishing ground** is loacted in the geographical proximity of which country?
  - A shallow area of the North Sea about 100 kilometres off the east coast of England

Prominent cities of Russia

Moscow	Port of five seas
Tula	Pittsburg of Russia
Ivanovo	Manchester of Russia
Volgograd	Oil refining centre
Vladivostok	Ship building centre

Capital Cities of South Africa

- Executive Capital – **Pretoria**
- Judicial Capital – **Bloemfontein**
- Legislative Capital – **Cape Town**

- ♦ What is the capital of the **youngest country** (54th country) of **Africa - South Sudan**? **- Juba**
- ♦ Which countries are included in the **Horn of Africa** ? **- Somalia, Ethiopia, Djibouti and Eritrea**

Lake Victoria, the **largest lake** in **Africa** is not in the rift valley, instead occupying a depression between the **eastern** and **western rifts**.

Major Latitudes Crossing through Africa

Equator (from west to east)	: Gabon, Congo, Congo Republic, Uganda, Kenya, Somalia
Tropic of Capricorn (from west to east)	: Namibia, Botswana, South Africa, Mozambique, Madagascar
Tropic of Cancer (from west to east)	: Western Sahara, Mauritania, Mali, Algeria, Libya, Egypt, Niger

Katanga plateau is one of the **largest Copper** and **uranium producing region** of **Zaire/Congo Basin.**

- ♦ Which strait separates **Europe** from **Africa**? **- Strait of Gibraltar**
- ♦ Which strait separates **Africa** from **Asia**? **- Strait of Bab Al Mandeb**
- ♦ **Africa's highest peak** is located in which country? **- Mount Kilimanjaro** (5895m), **Tanzania**

Coastline of Africa

Name of Coastline	Country
Grain Coast	Sierra Leone and Liberia
Ivory Coast	Ivory Coast
Gold Coast	Ghana
Slave Coast	Tongo, Benin and Nigeria

- ♦ **Drakensberg Scarpland** is located in which region of the **African continent**? **- South East Africa**

Mount Rwenzori is known as the **Mountain of the Moon** is located on the border of **Uganda** and **Democratic Republic of Congo.**

The **maximum temperature** of the **world** (58° C) is recorded at **Al Azizia** (Libya).

- ♦ **Ahaggar Massif**, a desert mountain is located in which **country of Africa** ? **- Algeria**

Rift Lakes of Africa

Lake Nyasa/Malawi	Lake Tanganyika
Lake Kivu	Lake Edward
Lake Albert	Lake Rukwa

- ♦ Which river forms the geographical boundary between **South Africa** and **Botswana - Zimbabwe**? **- Limpopo**

Sinai Peninsula, a part geographically loacted in **Asia** is a major conjunction point between **Africa** and **Asia.**

The river **Limpopo** in **Southern Africa** crosses the **Tropic of Capricorn twice.**

Prominent Cities of South Africa

Johannesburg	–	Famous for **Gold mines**
Witwatersrand	–	Famous for **Gold reserves**
Kimberley	–	Largest **diamond mine**, famous for best quality diamonds
Cape Town	–	Important region of **wine making** and fruit canning
Pretoria	–	Famous for **diamond mining**

- **North America** is connected with **South America** through which **graphical feature?**

  - Isthumus of Panama

- **Tennessee Valley** of **USA** is located in which geographical region ? **- Western Applanchian**

- The highest mountain peak of **North America - Mount Mckinley** (6190m) is located in which province of **USA?**

  - Alaska

Drainage Outlet

Towards Atlantic	Towards Pacific	Towards Arctic
St. Lawrence	Yukon	Mackenzie
Mississippi	Fraser	Churchill
Missouri	Columbia	Nelson
Rio Grande	San Joaquin	
	Colorado	

- The long chain of mountain ranges in **North America** streching from **Alaska to Panama** are geographically known as?

  - Western Cordillera (comprising of Rockies mountain range)

Cold labrador current meets **Gulf Stream current** near **Newfoundland** creating favourable conditions for the growth of **planktons. Grand Bank** near **Newfoundland** and **Georges Bank** near **Nova Scotia** is an important fishing ground.

- **Eskimos** live in houses made up of **Snow** called **Igloo** and use **Reindeer** and **Dogs** to pull sledges. They make boats with the **skin** and **bones** of **Seal** which is locally known as ? **- Kayaks**

- **Bermuda Island** located in the **North Atlantic Ocean** is a **British Island** territory on the Western bank of sargasso sea, what is its capital? **- Hamilton**

- Which country has the **largest coastline** in the **world?**

  - Canada

- The **largest wholesale** market of **wheat** in the world is located in which country? **- Winnipeg, Canada**

- World **Buffalo National Park** is located in which country?

  - Alberta province of Canada

- Which is the major **sea port** of **Canada?** **- Montreal**

- Which is the only country in **Central America** that does not have a coastline towards the **Caribbean Sea?**

  - El Salvador

Caribbean Countries with Capitals

Cuba	–	Havana
Puerto Rico	–	San Juan
Jamaica	–	Kingston
Trinidad and Tobago	–	Port of Spain
Barbados	–	Bridgetown
Bahamas	–	Nassau
Grenada	–	Saint George's
Hispaniola	–	Santo Domingo

- **Southernmost point** of **Tierra del Fuego** is known as?

  - Cape Horn

- **Falkland island** is disputed between which two countries? **- Argentina and U.K.**

- Which water body links **Atlantic Ocean** with the **Pacific?**

  - Magellan Strait

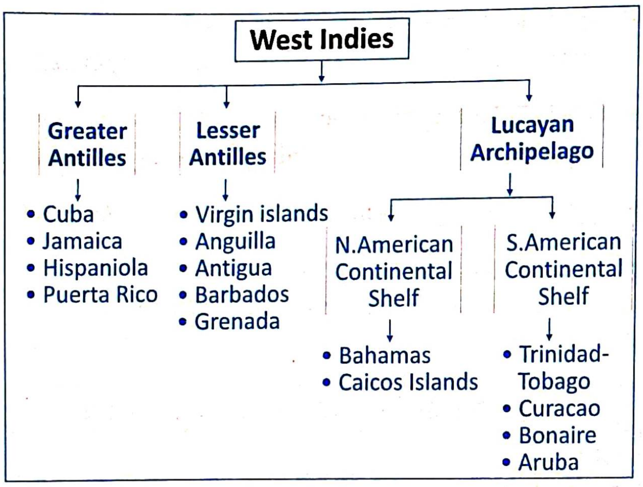
Central American Countries with Capitals

Guatemala	–	Guatemala city
Honduras	–	Tegucigalpa D.C.
Belize	–	Belmopan
El Salvador	–	San Salvador
Nicargua	–	Managua
Costa Rice	–	San Jose
Panama	–	Panama City

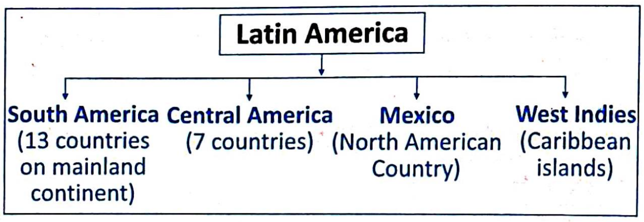
- The plantation found in **Brazil** suitable for the **cultivation** of **Coffee** is known as? **- Fazendas**

Lesotho (capital Maseru) is an enclaved country of **South Africa.**

- Which **South American country** is the largest producer of **Nitrates** in the world? **- Chile**
- **Chuquicamata plateau** of **Chile** is famous for the production of which mineral? **- Copper** (Copper capital of the world)


West Indies
Greater Antilles
Lesser Antilles
Lucayan Archipelago
• Cuba
• Jamaica
• Hispaniola
• Puerta Rico
• Virgin islands
• Anguilla
• Antigua
• Barbados
• Grenada
N.American Continental Shelf
S.American Continental Shelf
• Bahamas
• Caicos Islands
• Trinidad-Tobago
• Curacao
• Bonaire
• Aruba

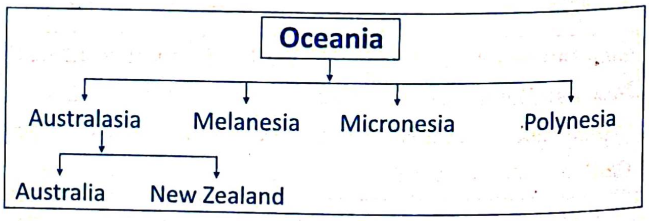
- **Melanesia**, **Mirconesia** and **Polynesia** form a part of which continent? **- Oceania**
- **Gibson desert** is located in which province of **Australia**? **- Western Australia**
- **Great Dividing Range** is located in which region of **Australia**? **- Eastern Australia**
- **Murray Darling basin** is a part of which **geographic region** of **Australia**? **- Central Lowlands, Western Australia**


Latin America
South America
(13 countries on mainland continent)
Central America
(7 countries)
Mexico
(North American Country)
West Indies
(Caribbean islands)

- **Larsemann Hills**, a series of low rounded **coastal hills** are a part of which continent? **- Antarctica** (along the southeastern shore of Prydz Bay)
- **Mt Erebus**, the only active volcano on **Antarctica** is a part of which island? **- Ross Island**
- Which are the **research stations** of **India** located in Antarctica? **- Dakshin Gangotri, Maitri and Bharti**
- **IndARC**, India's first underwater moored observatory in the **Arctic region** was deployed in **2014** at **Kongsfjorden fjord**. It is located in which region?**- Svalbard, Norway**
- Which is the **highest peak** of **Antarctica**? **- Mt. Vinson Massif**
- Which continent is also known as the **White Continent**? **- Antarctica** (as it remains covered with snow and thick ice sheets all year round)
- **Kookaburra** and **Dingo** are found in which country? **- Australia**
- The labourers working in sheep rearing regions of **Queensland** and **New South Wales** are known as? **- Jackaroo**
- **Southern Alps** are located in which country? **- New Zealand** (South Island)
- **Waikato river** is located in which country? **- New Zealand**
- Which country of the **world** has the **highest number** of **indigenous** living languages? **- Papua New Guinea** (840 languages)

India stands fourth in the world ranking of highest number of indigenous living languages at **453**.

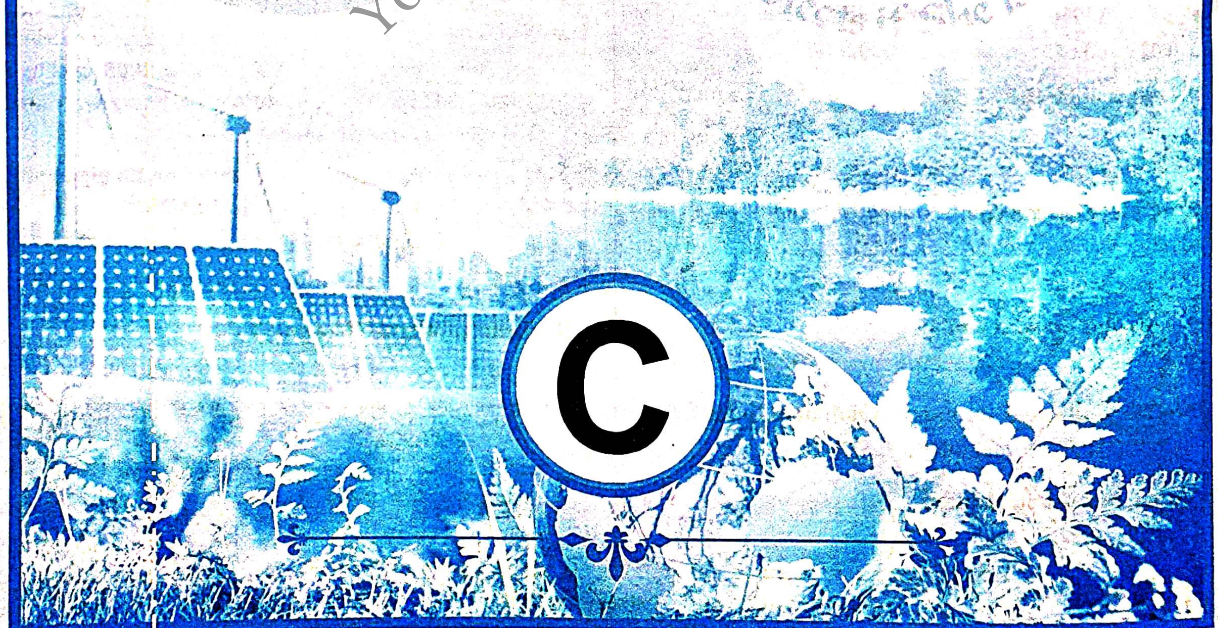
- **Bikini Atoll** is located in which country? **- Bikini Atoll, also known as Eschscholtz Atoll is a coral reef in the Marshall Islands** (Micronesia)
- **Gilbert**, **Phoenix** and **Line islands** are a part of which country? **- Kiribati**
- **Galapagos Islands**, a volcanic archipelago in the **Pacific Ocean** is officially a part of which country? **- Ecuador**


Oceania
Australasia
Melanesia
Micronesia
Polynesia
Australia
New Zealand

- Which is the **World's largest wool exporting port** located in **Australia**? **- Pearl Harbour, Sydney**

Australia is called a **thirsty land**, because most of it's land area receives little or **no rainfall**.

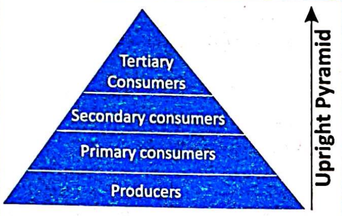
ENVIRONMENT



C

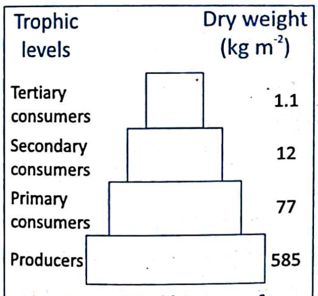
Environment and Ecology

- **Ecology** is the study of **traditional relations** between whom? - **Organisms and Environment**
- What are the **three major components** of the environment? - **Organic component, Inorganic or Physical component and Energy component**


Tertiary Consumers
Secondary consumers
Primary consumers
Producers
Upright Pyramid

Pyramid of Number

- Who was the **first person** to use the **Term Ecology**? - **Ernst Haeckel** (in 1869)
- **Grasslands, forests** and **deserts** are examples of which **ecological system**? - **Terrestrial ecosystem**

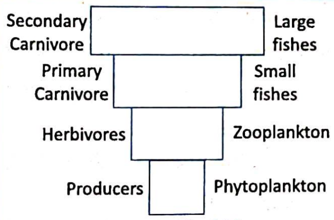

Trophic levels
Dry weight (kg m⁻²)
Tertiary consumers
1.1
Secondary consumers
12
Primary consumers
77
Producers
585

Pyramid of biomass for grassland ecosystem

- What describes not only the **location** occupied by the organism but also its **functional role** in the community of organisms? - **Ecological function**
- What type is the **flow of energy** in an **Ecosystem**? - **Unidirectional**

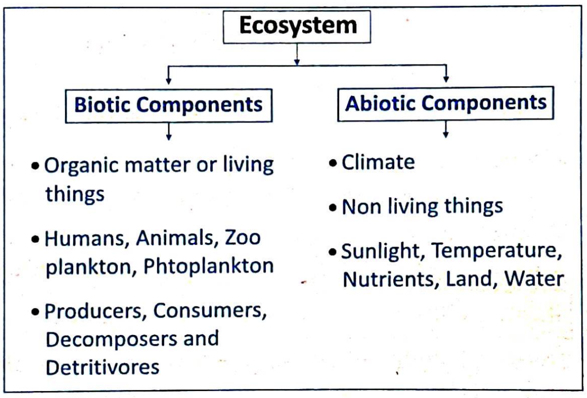
Reymond Lindeman gave the **10% of Energy Transfer Law** according to which **10% energy** is transferred from one trophic level to next successive level. Majority of energy is lost during **respiration** and energy transfer.

- What is the **pyramid of fauna** in **terrestrial ecosystems**? - **Upright**
- Who introduced the concept of **Sustainable Development**? - **Brundtland Commission** (1987)
- Which is the most **sustainable ecosystem**? - **Ocean**


Secondary Carnivore
Large fishes
Primary Carnivore
Small fishes
Herbivores
Zooplankton
Producers
Phytoplankton

Inverted pyramid of biomass for marine ecosystem

- How many types of **Ecological Pyramids** are there? - **3** (Pyramids of Number, Biomass and Energy)
- Which type of organisms are called decomposers in the context of **food chains** in the **ecosystem**? - **Fungi, bacteria**
- In which **ecosystem** is the **pyramid** of **biomass Inverted**? - **In the aquatic ecosystem**
- What is the **rotation of elements** called in the ecosystem? - **Biogeochemical cycle**
- What are the major **primary producers** of organisms in **marine ecosystem**? - **Phytoplankton**
- At which **level** of **food chain** do the **herbivores** or the **Primary consumer** exist? - **Second**
- What is considered to be the major **source of energy** of the **ecosystem**? - **Solar radiation**


Ecosystem
Biotic Components
Abiotic Components
• Organic matter or living things
• Humans, Animals, Zoo plankton, Phtoplankton
• Producers, Consumers, Decomposers and Detritivores
• Climate
• Non living things
• Sunlight, Temperature, Nutrients, Land, Water

British ecologiest **A.G. Tansley** first used the term **Ecosystem** in **1935**.

Biome and Biosphere

Biomes are the groups of **Ecosystems**, that share **similar climatic conditions** and same kind of **biotic** and **abiotic factors**, spread over a large area. All **Biomes** together make up the **Biosphere**.

- Which is the largest **biome** on **earth**? - **Aquatic biome**
- Which is the most **useful biome** in context to **biodiversity** and **bio-mass**? - **Tundra Biome**
- Which mechanism links all the **organisms** of a **community**? - **Food Network/ Food Web**
- **Ebony** and **Mahogany trees** are related to which forests? - **Tropical evergreen forests**
- **Sal, teak** and **rosewood trees** belong to which biome? - **Monsoon forest biome**
- Which biome has the **highest primary productivity**? - **Equatorial forest biome**
- Which biome is considered to be the **world's most disturbed Ecosystem**? - **Monsoon Biome**

Eucalyptus tree is called **ecological enemy**. It is found in abundance in the **continent of Australia**.

- The **creatures living** in the **deep water** of the **ocean** are known as? - **Benthos**
- **Plants** are green due to the presence of which Pigment? - **Chlorophyll**
- Since when is the state of **Forest Report** being published by the **Forest Survey of India**? - **Since 1987**

India State of Forest Report is published every two years by the **Forest Survey of India, Dehradun**.

- **Llanos and Campos grasses** are found in which biome? - **Tropical grass biome**
- In which **biome** are the conditions of the **optimum biome** found? - **Tropical Evergreen rain forest biome**
- **Elephant grass** is a major grass of which **biome**? - **Savanna biome**

Ecozones include only the terrestrial part of **Biosphere**.

- Which species live in a **large habitat** and are **usually migratory**? - **Umbrella species**

Types of Species

Dominant Species	Species having higher biomass than others. **Ex-** Kangaroo.
Keystone Species	Species exerting strong control on other species/over community by nature of it's ecological role. If they disappear, other species will vanish.
Foundation Species	They play a major role in creating or maintaining habitat that support other species. **Ex-** Corals.
Umbrella Species	Same as Keystone species, but migratory. **Ex-** Tigers.
Critical link Species	Pollinators, Dispersal agents, Circulating nutrients.
Flagship Species	Charismatic species that stimulate conservation awareness. **Ex-** Giant Panda, Asian Elephant, Bengal Tiger.
Indicator Species	Organisms whose presence or absence signal a change in environmental condition. **Ex-** Lichens.

- In any biome, the **life of animals**, their **intensity of activity** and their **number depends** on? - **Structure, gross biomass and composition**
- Which biome in the world is called the **main food repository** and **center of milk business**? - **Temperate grassland biome**
- What factors does the **species of plants**, their **structure** and **growth** depend on? - **The interrelation of physical and biological factors of the environment**

Biomes include both the **aquatic** and **Terrestrial parts**.

- In which type of **biome** are **deciduous forests** found? - **Monsoon forest biome**
- What is the **transition zone** between **two different ecosystems** called? - **Ecotone**
- Who **first presented** the concept of **ecological stupa**? - **Charles Elton**

Community refers to all the **populations** in a specific area at a **specific time**.

Species found in **Ecotone boundary** are known as **Edge Species**.

Biodiversity

- What is the meaning of **biodiversity**?
  - **Presence of different types of plants and animals in a given area**
- Who first used the term **Biodiversity**?
  - **Walter G. Rosen** (in 1985)
- Which **geographical area** is called the **storehouse of biodiversity**? - **Tropical rain forests**
- The decade **2011-2020** was declared by the **United Nations** as? - **Biodiversity Decade**
- Who first used the term **Hotspot**?
  - **British biologist Norman Myers** (in 1988)

Areas that are **highly productive ecologically** and where there is **availability** and **biodiversity** of **endemic species** are called **hotspots**. Currently they are **36** in the **world**.

- Where is **National Biological Diversity Authority** of **India** established? - **Chennai, Tamil Nadu** (Year 2003)
- Which **deciduous shrub** is popular in India as **Leh Berry**?
  - **Sea-Buckthorn**
- What is the term **M-STRIPES** related to?
  - **Maintenance of tiger reserves**
- Where are the **natural habitats** of **lion-tailed apes** (macaque) found in **India**?
  - **Tamil Nadu, Kerala and Karnataka**
- In which year was the **Biodiversity Act** passed by the **Government of India**? - **2002**

Marine National Parks in India

♦ Gulf of Kutch Marine National Park	-	**Gujarat**
♦ Mahatma Gandhi Marine National Park	-	**Andaman Island**
♦ Gahirmatha Marine Wildlife Sanctuary	-	**Odisha**
♦ Gulf of Mannar Marine National Park	-	**Tamil Nadu**
♦ Malvan Marine Wildlife Sanctuary	-	**Maharashtra**

- Where is **India's first marine national park** located?
  - **Gulf of Kutch** (Gujarat)

Biodiversity hotspot regions of India-

1. Western Ghats
2. Indo-Burma Region
3. Eastern Himalayas
4. Sundaland (Nicobar Islands)

- Who is **Flying fox** and also known as the **Great Indian fruit**? - **A species of bats** (Pteropus)
- **Red Data Book** or **Red List** is maintained by which organization? - **I.U.C.N**
- Which medicine is responsible for the **reduction** in the **number of vultures**? - **Diclofenac Sodium**
- Where are the **headquarters** of the **Animal Fauna Welfare Board of India** located?
  - **Ballabhgarh, Haryana**
- Where is the **natural habitat** of **Red Panda** found in **India**? - **Sub-Himalayan regions of north-eastern India**
- **Dachigam National Park** is famous for the conservation of which animal? – **Kashmiri Stag**
- Which **National park** in India is located at the highest altitude? – **Hemis** (Ladakh)
- Which **group of organisms** convert **ammonia** into **nitrite**?
  - **Nitrosomonas**
- In which form does the **paddy plant** accept **nitrogen**?
  - **In the form of ammonium** (NH_4)
- By what means does **chemical elements** enter the **biosphere ecosystem**? - **Through the roots of plants**

The **states** of **North East** in **India** are called the **Gateway to Biodiversity**.

- How many **bio-geographical regions** are present in **India**? - **10**
- When a community is **permanent, mature, complex** and **long-lived**, it is known as? - **Climax community**
- Which is the **biggest biosphere reserve** in terms of area in India? - **Rann of Kutch** (12,454 km^2)

South Button Island, located in the **Andaman and Nicobar Islands**, is the **smallest national park** in **India**.

Youtuber-General Gyan

- Which tree has been given the name as **Simile of Kalpavriksha?** - **Coconut**
- Which rivers flow through the **Keoladeo National Park?** - **Banganga** (Rajasthan) **and Gambhiri**
- Which **national park** is famous as the **Paradise of birds** in **India?** - **Keoladeo National Park** (Bharatpur, Rajasthan)
- Which element is depleted most from the soil after a **crop** is **harvested?** - **Potassium**

In situ Conservation	Ex situ Conservation
◆ Conservation of Biodiversity in their natural habitats.	Conservation of Biological diversity outside their natural habitats.
Examples	**Examples**
◆ National Parks, Sanctuaries, Tiger Reserves.	Zoo, Aquarium, Seed Banks Botanical Gardens, Artificial greenhouse.

- **Conservation of flora** by **artificial greenhouse** is a method under? - **Ex-situ Conservation**
- How many **biosphere reserves** from **India** are included in the MAB program of UNESCO? - **12**
- Where was the **first biosphere reserve** established in India? - **Nilgiri** (1986)
- **Cartagena Protocol** is related to? - **Biosafety Agreement**
- The **Cartagena Protocol** of **Biosafety** is implemented by which central ministry? - **Ministry of Environment, Forests and Climate Change**
- Which **type of biodiversity** is used in reproductive functions? - **Genetic diversity**
- Who first categorised India into **bio-geographical** regions? - **Rodgers and Panwar** (1988)
- What is **Arribada?** - **Comprehensive nesting process of some species of sea turtles**
- Who has been given the **title of Ganga Tiger?** - **Dolphin**
- Where are the headquarters of the **World Wide Fund** located? - **Gland, Switzerland**
- Which state has the **highest number** of **national parks?** - **Madhya Pradesh** (11)
- In which city is India's first **National Center for Marine Biodiversity** located? - **Jamnagar** (Gujarat)
- Where is the **flying lizard** called **Draco** found in India? - **In the forests of the Western Ghats**
- Which is **India's largest tiger reserve** in terms of area? - **Nagarjuna Sagar 3,728 km²** (Andhra Pradesh)
- Which **island** in the world is reserved for **birds** only? - **Cousin Island, Seychelles**
- Where was the **first bird sanctuary** established in India? - **Vedanthangal** (Tamil Nadu, 1936)
- India's famous **Nilgiri Biosphere Reserve area** is spread through how many states? - **Three states** (Karnataka, Tamil Nadu and Kerala)
- **Kanha National Park** is famous for the conservation of which animal? - **Barasingha**
- Which mountaineer discovered India's famous **Valley of Flower National Park** area? - **Frank Smyth, Houldsworth and Eric Shipton**

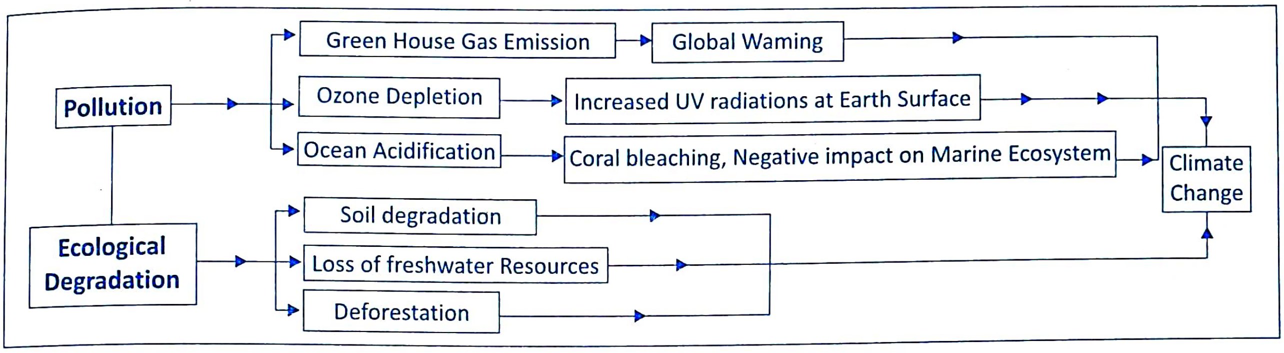
Bird Sanctuaries in India	
◆ Ghana Bird Sanctuary	- Bharatpur, Rajasthan
◆ Ranganathittu Bird Sanctuary	- Mandya (Karnataka)
◆ Vedanthangal Bird Sanctuary	- Kanchipuram, Tamil Nadu
◆ Nelapattu Bird Sanctuary	- Nellore (Andhra Pradesh)
◆ Sultanpur Bird Sanctuary	- Gurugram (Haryana)
◆ Salim Ali Bird Sanctuary	- Chorao (Goa)
◆ Kaundinya Bird Sanctuary	- Chittoor (Andhra Pradesh)
◆ Chilika Lake Bird Sanctuary	- Near Puri (Odisha)
◆ Kumarakom Bird Sanctuary	- Kottayam (Kerala)

Jim Corbett National Park (Uttarakhand) previously known as **Hailey National Park** was the first **National Park** of **India** and the first tiger reserve to be notified under Project Tiger.

Climate Change

- What are the major causes of **climate change**?
  - Global Warming, Environmental Pollution and Ecological Degradation

- On what factors does the **global heating potential** of a gas depend? **- Efficiency of the molecules and the atmospheric lifetime of that gas**


Pollution
Ecological Degradation
Green House Gas Emission
Global Waming
Ozone Depletion
Increased UV radiations at Earth Surface
Ocean Acidification
Coral bleaching, Negative impact on Marine Ecosystem
Soil degradation
Loss of freshwater Resources
Deforestation
Climate Change

- Who introduced the **concept of greenhouse gases** (GHGS)? **- Joseph Fourier**

- Which is the most **brittle ecosystem** that will be affected first by **global warming**?
  - Arctic and Greenland icebergs

- Which **natural greenhouse gas** produces the most **greenhouse effect**? **- Water vapour**

- In which year did the **Kyoto Protocol** came into effect?
  - February, 2005

- Why does the **temperature** of the **atmosphere** increases as the amount of **carbon dioxide** in the **air increases**?
  - Because carbon dioxide absorbs the infrared rays of solar radiation

- **Green House Gas Protocol** was developed by?
  - World Resource Institute (WRI) **and World Business Council for Sustainable Development** (WBCSD)

- What are the major **natural sources** of **methane gas emissions**? **- Wetlands, Seas, Hydrates**

- Where are global atmospheric **monitoring stations** set up to get data on **world temperatures**?
  - Algeria, Brazil and Kenya

- Which methods are helpful in **carbon coverings / storage** in the soil in the context of **global climate change**?
  - Contour Bund, Non-cropping and Zero tillage

- From where does the **cryogenic** indicator of **climate change are obtained**? **- Ice sheets and ice chores**

- Where was **world's first climate conference** held?
  - Geneva, Switzerland (1979)

- In which **international conference** was the provision for the formation of **Green Climate Fund** (GCF) made?
  - Cancun Conference (Mexico, 2010)

- Which events reflect the **effects** of **global warming**?
  - Melting of glaciers, rise in ocean floor, change in seasonal conditions, increase in global temperature etc.

- Which two countries will have to **re-establish** their **international boundaries** if the **Alpine glacier** melts due to **global warming**? **- Italy and Switzerland**

Water Vapour is the most **abundant** and **largest contributor** to the **Earth's greenhouse effect** accounting for about **60%** of the global warming effect. It stays in the atmosphere for few days, while other greenhouse gases such as **carbon dioxide** or **methane**, stay in the atmosphere for years contributing to warming for an extended period.

- When did India agreed to the **second commitment period** of the **Kyoto Protocol**? **- August 8, 2017**

- When was the first report of **Intergovernmental Panel on Climate Change** (IPCC) published? **- 1990**

Bhutan is a **carbon negative country**. It absorbs **6 million tons** of carbon from the **atmosphere** every year.

Ozone Layer Depletion and Pollution

- **Ozone layer** is located in which **layer** of the **atmosphere**? - **Stratosphere**
- At what **height** is the **ozone layer** concentrated in atmosphere? - **20 to 35 kilometers**
- In the year **2005**, who discovered the **upper ozone aura** of **Tibet Plateau**? - **G.W. Kent Moore**
- Who discovered the **upper ozone hole** in **Antarctica**? - **Joe Farman, Brian Gardiner and Jonathan Shanklin**
- **Montreal Protocol** is related to which issue/pollutant? - **Preventing the depletion of the ozone layer** (1987)
- Gases responsible for the degradation of **ozone layer**? - **CFC, Halogen, Nitrous Oxide, Trichloroethylene, Halon-1211, 1301 etc.**
- What is the unit for measurement of **Ozone layer**? - **Dobson Unit-DU**
- What is the size of **respirable microscopic particles** floating in air? - **Less than 5 microns**
- How do **bio-degradable non-pollutants** enter the environment? - **Due to human-caused pollution** (Anthropogenic Pollution)
- Air pollutants that are directly mixed with the **pollutant source** in the **air** are called? - **Primary pollutants**

Primary pollutants

- Directly emitted from **fossil fuel consumption**, **Volcanic eruption** and **factories**.
- Ammonia, Sulfur dioxide, Nitrogen dioxide and Carbon monoxide.
- Oxides of Sulphur, Oxides of Nitrogen, Oxides of Carbon, Particulate Matter, Methane, Ammonia, Chlorofluorocarbons.
- Toxic metals such as Cadmium, Lead and Copper, which are products of the Industrial processes

Secondary pollutants

- Ground Level Ozone, Smog and POPs (Persistent Organic Pollutants).

- What type of pollutants are **Peroxyacetyl Nitrates** (PAN), **ozone** and **smog**? - **Secondary pollutants**
- What are the air pollutants, produced as a result of the action of **primary air pollutants** and **ordinary atmospheric** substances? - **Secondary air pollutants**
- Which air pollutant dissolves in the **haemoglobin** of the blood more **quickly** than **oxygen**? - **Carbon monoxide** (forming Carboxy haeomoglobin)
- When inorganic nutrients such as **phosphate** and **nitrates** dissolve and enter the **aquatic ecosystem**, they lead to which phenomenon? - **Eutrophication**
- Which **Industry labours** are most prone to **cytosilicosis** disease? - **Cement**
- If the **contaminated material** is taken to another place and it is **bio-treated**, what will this process be called? - **Ex-situ bioremediation**
- What are pollutants that are decomposed by **micro-organisms** (such as bacteria, etc.) into **simple, harmless elements** called? - **Biodegradable pollutants**
- Which are the most important factors responsible for the decoloration of Taj Mahal? - **Nano sized carbon airborne particles-Automobiles & Vehicles** (air pollutants), **Acid rains** (from factories and oil refineries)
- What effect does **acid rain** have on the soil? - **The soil's pH value is reduced**

- Gases responsible for **Acid Rain : Sulphur Dioxide** (SO_2) and **Nitrogen Oxides** (NOx)
- Sulphur Dioxide combines with water to form **Sulphuric Acid** and **Nitrogen oxides** combines with water (during rainfall) to form **Nitric Acid**.
- **Effects of Acid Rain :** Washes **protective film** on leaves, Stunts **plant growth**, Raises the level of **acidity** (reducing pH) of water bodies, Deteriorate **limestone** and marble buildings and **monuments**.

- Which disease is caused by living in an **environment** that is **rich** in **Asbestos fiber**? - **Asbestosis**

Ozone layer was discovered in **1913** by the **French physicists Charles Fabry** and **Henri Buisson**.

Major Pollutants, Sources and effects on Humans and Environment

Pollutants	Source of Production	Effects
♦ **Oxides of Carbon** (Cox)	Combustion of coal, oil and other fuels for energy production manufacturing and transport Biomass burning.	• Green-house effect, produces weak carbonic acid adding to acid rains. • CO affects human health by binding to Haemoglobin, which may result in asphyxia. • Heamoglobin has 250 times more affinity with CO as compared to that of O_2.
♦ **Oxides of Sulphur** (SOx)	Combustion of sulphur containing fuel e.g., coal, petroleum extraction and refining; paper manufacturing; municipal incinerating; ore smelting for metal extraction	• Damage to human and other animal lungs and is important precursor to acid rain. • Adverse effects including corrosion of paint, metals and injury or death to animals and plants.
♦ **Oxides of Nitrogen** (NOx)	Burning of fuels; biomass burning; byproduct in the manufacturing of fertilizers	• Form the secondary pollutants. • Peroxy acetyl nitrate (PAN) and nitric acid suppression irritation to eyes. • Viral infections like influenza. • Nitrate form in atmosphere impairs the visibility.
♦ **Hydrocarbons (HCs) / Volatile Organic compounds**	Evaporation from gasoline tanks, carburettors; burning of fuels; biomass; municipal lard fills; microbial activity of sewage; industrial process involving solvents.	• Carcinogenic effect on humans. • Higher concentrations are toxic to plants and animals. • Some are more reactive with sunlight and produce photochemical smog.
♦ **Other organic compounds** [Chlorofluorocarbons (CFCs), Formaldehyde (CH20), Methylene chloride (CH2Cl2),	Aerosol sprays; foam and plastics for making disposable fast food containers; refrigeration	• Cause reduction in stratospheric ozone and intensified UV radiations cause skin cancer.
♦ **Metals and other inorganic Compounds** [Lead (Pb), mercury (Hg), Hydrogen sulphide (H2S), Hydrogen Fluoride (HF)]	Oil wells and refineries; transport vehicles; municipal landfills; fertilizer, ceramic, paper, chemical and paint industries pesticides; fungicides; aluminium production; coal gasification	• Cause respiratory problems. • Toxicity and even death to humans and Other animals. • Damage to crops. • Prove to be carcinogenic.
♦ **Liquid droplets** [Sulphuric acid, Nitric acid, Pesticides]	Agriculture pesticides; fumigation; oil refineries	• Contribute to acid rains. • Corrosion. • Damage to various life forms in atmosphere
♦ **Suspended Particulate Matter, Dust, soil, sulphate Salts**	Fuel combustion; building constructions; mining; thermal power stations; stone crushing; industrial processes; forest fires; incineration.	• Have chronic effects on respiratory system. • Deposition on the surface of green leaves • Particles 0.1 to 10um, cause lung damage
♦ **Photochemical oxidants** [Ozone (03), Peroxyacly Nitrates (PANs)]	Photochemical reactions in the atmosphere that involve sunlight, oxides of nitrogen and hydrocarbons.	• Produce haze, irritation to eyes, nose and throat, Respiratory problems.

Radon gas is the most important pollutant of **indoor air pollution**. It causes **lung cancer** and **blood cancer**.

- What is meant by **bioremediation**? - **Removal of toxins from the environment by living the creatures** (Microbes, bacteria)
- If **bioremediation** is done in the **polluted area**, what is it called? - **In-situ bioremediation**
- What is **bioremediation** by **storing pollutants** in **roots** and **leaves** called? - **Phytoextraction**
- If the **contaminated material** is taken to another place and it is **bio-treated**, what will this process be called? - **Ex-situ bioremediation**
- When did the **nuclear disaster** happened at the **Nuclear Center** in **Chernobyl** (Ukraine)? - **April 26, 1986**
- Which river of India is known as **Organic Desert** due to its **pollutants**? - **Damodar River**
- Which disease occurs in children due to **excess nitrate** in **drinking water**? - **Blue-baby-syndrome or Infant methemoglobinemia**
- Which major pollutants are found in **cigarette smoke**? - **Nitrogen Oxide, Carbon monoxide and Benzene**
- Which **ecological issue** is associated with the **Green Muffler**? - **Sound pollution**
- Which gas is released by the **incomplete ignition** in vehicles? - **Carbon monoxide**
- Why can't **polythene bags** be destroyed? - **They are made of polymer**
- Which gas was leaked from **Union Carbide factory** in **Bhopal Gas tragedy** (2-3 December, 1984) - **Methyl isocynate** (MIC)
- Why is an **incinerator** used? - **For burning garbage and waste**
- In which year did the **Water Pollution Prevention and Control Act** came into force in India? - **1974**
- Which **fuel produces** the least **air pollution**? - **Hydrogen**
- Which gas is emitted from **supersonic jets** damages the **ozone layer**? - **Nitrogen oxide**
- Which disease is caused by **pollen particles** of **Parthenium**? - **Skin disease and asthma**
- **Lichens** are the **best indicators** of which type of pollution? - **Air pollution**
- What **type of pollution** occurs due to the use of **nuclear energy**? - **Radioactive Pollution**
- What is added to get **proper octane value** in **lead free petrol**? - **Benzene, Toluene and Zelene**
- **Itai-Itai disease** is caused by which **metal**? - **Cadmium**
- Which **disease** is likely to occur due to **benzene**? - **Blood cancer**
- What type of **dust particles** cause diseases like **silicosis** and **asbestosis**? - **Dust particles containing Silica and Asbestos**
- What are the major **pollutants** affecting **ground water**? - **Arsenic and Fluoride**
- Which disease is common to persons engaged in **coal industry**? - **Pneumoconiosis**
- Which substance is found in excess in all the **detergents** in **India**? - **Phosphate**
- In which industry are people at risk of becoming infected with **Byssinosis disease**? - **Textile Industry**
- What causes the disease called **Black Foot**? - **Excess of arsenic in drinking water**
- Which plant is known as an **absorber** of **aquatic toxins**? - **Hyacinth**

Air Pollutant	**Effected Organ**
♦ Asbestos dust	Lungs
♦ Lead	Brain
♦ Mercury	Stomach
♦ Carbon Monoxide	Nerves and Arteries

SAFAR is an initiative of **Ministry of Earth Sciences** (MoES) to measure the air quality of a **metropolitan city**.

Miscellaneous

- Why is **Pugmark Technology** used?
  - **To estimate the population of wild animals**
- **Agenda-21** is related to?
  - **Sustainable development** (presented in the Earth Conference of Rio de Janeiro - 1992)
- What is **Eco-Mark**? - **Certification mark provided by Bureau of Indian Standards** (BIS) **to eco-friendly products**
- **Global-500 award** is given for **special achievements** in which field?
  - **In the field of environmental protection**
- What is **Earth Overshoot Day**?
  - **The day marks the date when humanity's demand for ecological resources in a given year exceeds, what the earth can regenerate in that year**

> The concept of **Earth Overshoot Day** was first conceived by **Andrew Simms** of UK based **New Economics Foundation** (2006).

- In which country is **National Sanitation Day** celebrated on the **First Saturday** of each month? - **Sierra Leone**
- Which **environmental activist** is known as **Tree man**?
  - **Chandi Prasad Bhatt** (associated with Chipko movement)
- In which field **Rajiv Gandhi Environmental Award** is given?
  - **For the contribution in clean technology development**
- Where is **National Environmental Engineering Research Institute** (NEERI) located? - **Nagpur**
- Why is the **Periyar Game Sanctury** (Kerala) famous?
  - **Tiger**
- Where is the **Indian Institute of Ecology and Environment** located? - **New Delhi**
- In which field is the **Sasakawa Award** given?
  - **For the Contribution in environmental protection and management**
- When was **India's first National Action Plan** on **Climate Change** published? - **June, 2008**
- Where is the **Indian Wildlife Institute** located?
  - **Dehradun** (Uttarakhand)
- Which country is the **first country** to introduce the concept of **green GDP** in **green economy**? - **China**
- **Ecology is permanent economy**, it was the slogan of which movement? - **Chipko movement**
- Where is **National Agro-Forestry Research Center** located? - **Jhansi** (Uttar Pradesh)
- With which field **Amrita Devi Smriti Award** is related to?
  - **Work done for the protection of forests and wildlife**
- Which animal is the mascot of the **World Wildlife Fund**?
  - **Giant Panda**

Environmental Movements	**Related Personalities in India**
♦ Appiko Movement (1983, Karnataka)	– Pandurang Hegde
♦ Tehri Dam Conflict (1990's, Uttarakhand)	– Sundarlal Bahuguna
♦ Chipko Movement (1973, Uttarakhand)	– Sundarlal Bahuguna, Gaura Devi, Chandi Prasad Bhatt
♦ Narmada Bachao Andolan (1985, Madhya Pradesh)	– Medha Patker, Baba Amte
♦ Maiti Movement (1994, Uttarakhand)	– Kalyan Singh Rawat
♦ Bishoi Movement (1700's, Rajasthan)	– Amrita Devi Bishnoi
♦ Save Silent Valley Movement (1978, Kerala)	– Sugatha Kumari
♦ Jungle Bachao Movement (1982, Bihar)	– Tribals of Singhbhum district

> Agricultural scientist **M.S. Swaminathan** has been conferred the title of **Father of Economic Ecology** by **UNEP**.

- What was the previous name of **Ministry of Earth Sciences?** - **Ministry of Ocean Development**

- When was **Yamuna Action Plan** formally launched? - **1993**

- In which year **Central Ganga Authority** was formed by the **Government of India?** - **1985**

- Where was the **first earth summit** held? - **Rio de Janeiro, Brazil** (1992)

Major Environment related National / International Dates

World Wetlands Day	**February 2**
World Forestry Day	**March 21**
UN World Water Day	**March 22**
UN World Meteorological Day	**March 23**
National Wildlife Week	**March 18-24**
UN Earth Day	**April 22**
Arbor Day	**Last Friday of April**
World Migratory Bird Day	**May 8**
International Day for Biological Diversity / World Biodiversity Day	**May 22**
UN World Environment Day	**June 5**
UN World Day to Combat Desertification and Drought	**June 17**
UN World Population Day	**July 11**
Earth Overshoot Day, 2020	**August 22**
Car Free Day	**September 16**
International Day for the Preservation of the Ozone Layer / World Ozone Day	**September 16**
Green Consumer Day	**September 28**
UN World Habitat Day	**October 3**
World Animal Welfare Day	**October 4**
World Wildlife Week	**October 1-7**
International Day for Natural Disaster Reduction	**October 13**
International Day for Preventing the Exploitation of the Environment in War and Armed Conflict	**November 6**
International Mountain Day	**December 11**

- In which city was the **first summit** of the **International Solar Alliance** held? - **New Delhi** (2018)

Major Environmental Acts in India

- Indian Forest Act, 1927.
- Wildlife Protection Act, 1972.
- Water (Prevention and Control of Pollution) Act, 1974.
- Forest Conservation Act, 1980.
- Air (Prevention and Control of Pollution) Act, 1981.
- Environment (Protection) Act, 1986.
- Hazardous Waste Handling and Management Act, 1989.
- Public Liability Insurance Act, 1991.
- Noise Pollution (Regulation and Control) Rules, 2000
- Protection of Plant Varieties & Farmers' Rights Act of 2001.
- Biological Diversity Act, 2002.
- Wild Life (Protection) Amendment Act, 2002.
- The Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006.
- National Green Tribunal Act, 2010.

Major Green House Gases and their Sources

Green House Gas	Sources
Carbon dioxide (CO_2)	Burning of fossil fuels, deforestation
Chlorofluorocarbons (CFCs)	Refrigeration, solvents, insulation foams, aero propellants, industrial and commercial uses
Methane (CH_4)	Growing paddy, excreta of cattle and other livestock, termites, burning of fossil fuel, wood, landfills, wetlands, fertilizer factories.
Nitrogen oxides (N_2O)	Burning of fossil fuels, fertilizers; burning of wood and crop residue.
Carbon Monoxide (CO)	Iron ore smelting, burning of fossil fuels, burning e-waste

The **Shore Nuisance** (Bombay and Kolaba) **Act, 1853** was the **first Environmental Act** (on water pollution) in **India**.

Major Environmental Treaties and Conventions

Antarctic Treaty (Washington, 1959)

- Antarctic zone (south of 60° S) to be used for peaceful purposes only and shall not become an object of international discord.
- It **prohibits all military activities** in the region, allows **freedom of scientific inquiry** and international co-operation in scientific activities.
- **India** signed the Antarctic Treaty system in **1983**

Convention on International Trade in Endangered Species of wild fauna and flora (CITES), 1973

- It was signed in **March 1973** for the regulation of international trade in **endangered species** of wild flora and fauna.
- **India** had signed the agreement in **July 1976**

Vienna Convention, 1985

- Provided frameworks for international reductions in the production of **chlorofluorocarbons** due to their contribution to the destruction of the **ozone layer**.

Montreal Protocol on Substances that deplete the Ozone Layer / Montreal Protocol, 1987

- It set targets aimed at a reduction in the production and consumption of **ozone depleting substances** (ODS) and came into force in **1989**.
- It was adopted by India in **September 1992**.

Basel Convention on Transboundary Movement of Hazardous Wastes, 1989

- Known popularly as the **Basel Convention**, the convention aims for a reduction in the **transboundary movement of hazardous wastes** and their disposal.
- It also prohibits shipment of hazardous waste to countries unable to dispose of the hazardous waste in an environment-friendly manner.
- **India** ratified to the treaty in **1992** and included some provisions of the Basel Convention in The **Indian Hazardous Waste Management Rules Act, 1989**.

UN Framework Convention on Climate Change (UNFCCC), 1992

- It aims to regulate **greenhouse gas emissions** through international co-operation and agreement and to bring emissions to **pre industrial level**.
- India became a member of the convention in **1992** and ratified it in **1993**.
- Earlier, as a developing nation (as per the UNFCCC at the time), India was not bound to commitments for mitigation of greenhouse gas emissions. With the **Paris Agreement of 2015**, India has a commitment to participate in multilateral negotiations under the **UNFCCC**.

Convention on Biological Diversity, 1992

- It provides a **legally binding framework** for the **conservation of biodiversity, sustainability** in use of **biological resources** and the **equitable sharing of benefits and knowledge** that arise in the case of the usage of biological resources. It was enforced in **1993**
- **Nagoya Protocol** was adopted in **2010** to propagate the continued development of the access and benefit sharing framework in the Convention.
- India passed the **Biological Diversity Act, 2002** providing a legal framework for addressing biodiversity.

Agenda 21

- Agenda 21 is a product of the Earth Summit organized by the United Nations at **Rio de Janerio, Brazil** in **1992** to include stakeholders in a non-binding action plan for achieving sustainable development.
- **India** is a signatory to **Agenda 21**.

UN Convention on Desertification, 1994

- It was formulated in **1994** and seeks a bottom-up approach to build international co-operation in **combating desertification** or addressing policy in regions prone to droughts.

Cartagena Protocol on Biosafety

- It is a supplement to the Convention on Biological Diversity and provides an international regulatory framework for the safe use, transfer and handling of **Living Modified Organisms** (LMOs) i.e. genetically modified organisms resulting from biotechnology.
- It came into force in **January 2000**. **India** is party to it.

Prior Informed Consent, Rotterdam Convention

- It promotes shared responsibility in the trade of hazardous chemicals.
- It came into force in **February 2004**. India ratified the treaty in **2005**.

Major Environmental Organizations and Institutions			
Name	**Estd. Year**	**Headquarters**	**Objective**
United Nations Environment Program	1972	Nairobi, Kenya	• Global environmental authority that sets the **global environmental agenda**. • Assess global, regional and national environmental conditions and trends and develops **environmental instruments**. • It's **Disasters** and **Conflicts programme** seeks to minimize environmental threats to human well-being from the environmental causes.
International Union for Conservation of Nature (IUCN)	1948	Gland, Switzerland	• Responsible for publishing the **IUCN Red List** which categorizes biological species by their conservation status.
Intergovernmental Panel on Climate Change (IPCC)	1988	Geneva, Switzerland	• To assess scientific information relevant to: **Human-induced climate change**, the impacts of human-induced climate change, options for adaptation and mitigation.
World Meteorological Organization (WMO)	1950	Geneva, Switzerland	• Dedicated to international cooperation and coordination on the state and behaviour of the Earth's atmosphere, **atmosphere's interaction** with the land and oceans, **weather** and **climate** it produces and resulting distribution of water resources.
World Wide Fund for Nature	1961	Gland, Switzerland	• To conserve nature and reduce the most pressing threats to the diversity of life on Earth. • Campaigns launched by **WWF** include **Earth Hour** and **Debt-for-Nature Swap**. • Publishes **Living Planet Report** (since 1998) • The logo of WWF is **Giant Panda**.
Green Peace	1971	Amsterdam, Netherlands	• It is a NGO that uses non-violent and creative campaigns to **highlight global environmental** problems in order to find solutions for a sustainable future for the planet and the human race.
Wetlands International	1995	Wageningen, Netherlands	• **Wetlands International** is a global organisation that works to sustain and restore wetlands and their resources for **people** and **biodiversity**. • It is an independent, **not-for-profit**, **global organisation**, supported by **government** and **NGO membership** from around the world.

International Union for Conservation of Nature (IUCN) founded in **1948** is the **world's oldest** and **largest global environmental organisation**.

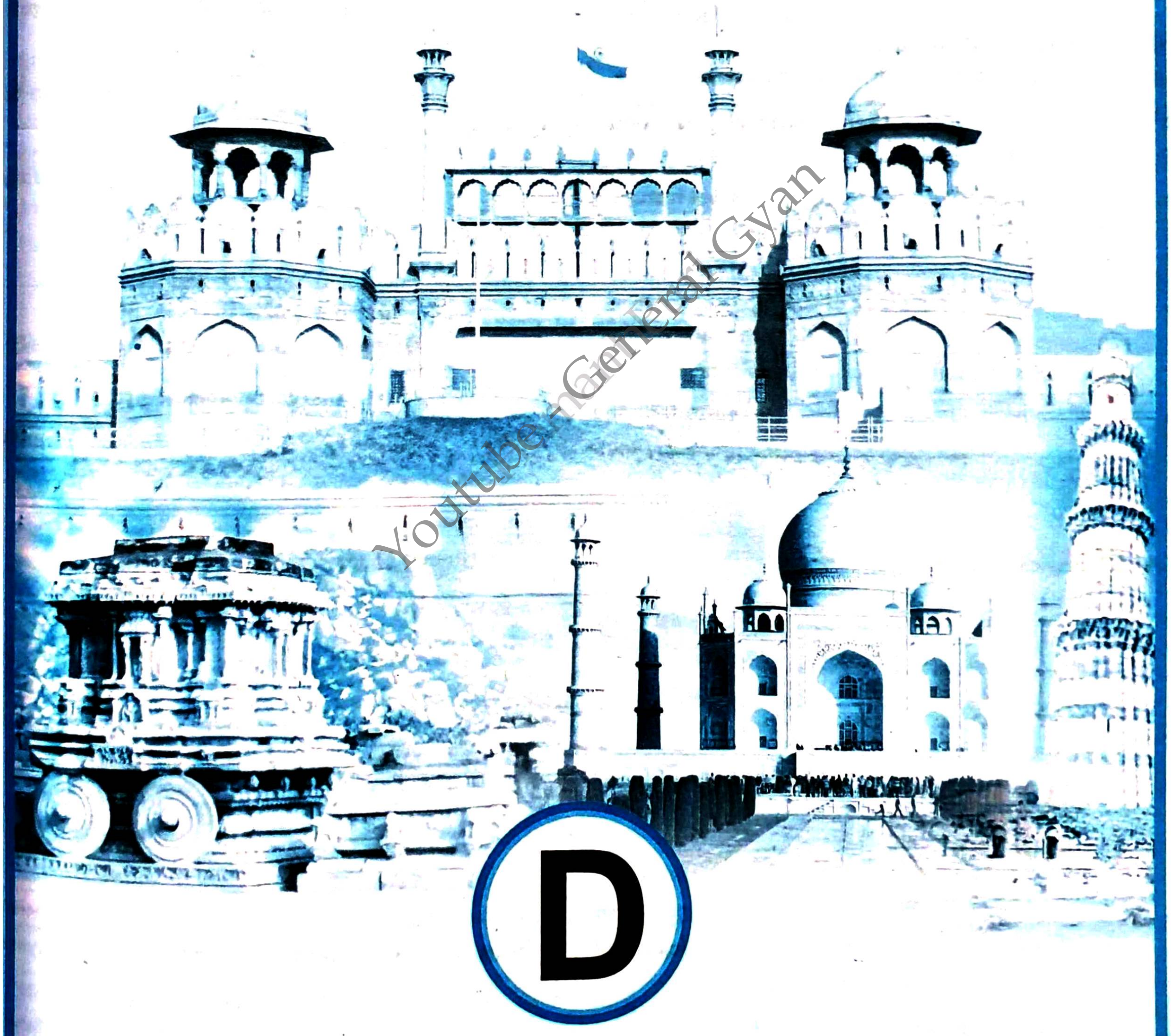
Name	Estd. Year	Headquarters	Objective
Global Environment Facility (GEF)	1991	Washington DC, USA	- Finances projects concerning **climate change, land degradation, international water, biodiversity**, and the **ozone layer**. GEF funds the following conventions: **Convention on Biological Diversity** (CBD), **United Nations Framework Convention on Climate Change** (UNFCCC), **UN Convention to Combat Desertification** (UNCCD), **Stockholm Convention on Persistent Organic Pollutants** (POPs), **Minamata Convention on Mercury**.
TRAFFIC	1976	Cambridge, United Kingdom	- The TRAFFIC, the **Wildlife Trade Monitoring Network**, is a leading **non-governmental organisation** working on wildlife trade in the context of both **biodiversity conservation** and **sustainable development**. - It is a joint program of **World Wildlife Fund** (WWF) and the **International Union for Conservation of Nature** (IUCN).
Global Green Growth Institute	2010	Seoul, South Korea	- Adoption and implementation of green growth plans, provision of research for policymakers, and **private sector engagement** in the implementation of the national green growth plans.
Bio-carbon Fund initiative	2013	USA	- To promote reduced greenhouse gas emissions from the land sector, from **deforestation and forest degradation** in developing countries (REDD+), and from **sustainable agriculture**, as well as **smarter land-use planning**, policies and practices.
Arctic Council	1996	Norway Secretariat rotates biennially among the members	- Promotes cooperation, coordination, and interaction the **Arctic States** (8 countries), Arctic Chairmanship of the indigenous communities and other Arctic inhabitants on Arctic Council common Arctic issues, in particular on issues of **sustainable development** and environmental. **India** has an **observer status**.
International Whaling Commission	1946	Cambridge, United Kingdom	- To provide the proper conservation of **whale stocks** and thus make possible the orderly development of the whaling industry.
World Nature Organization (WNO)	2010	Geneva	- To promote **ecologically friendly businesses**, technology, energy, and activities. - **India** is **not** a **member** of WNO.

Bishnoi community of **Rajasthan** and **Haryana** is considered the **first environmentalist** of **India** (since 15th Century)

International Environmental Conventions and Treaties			
	Convention	**Years**	**Provision**
1.	Stockholm conference	1972	Considered the need to inspire and guide the peoples in the preservation and enhancement of the human environment. Established by **UNEP**.
2.	Helsinki Convention	1992	Protection of the **Marine Environment**.
3.	Montreal Protocol	1987	Phasing out production of the **Ozone depleting substances**.
4.	Rio Convention	1992	Rio Convention relates to the following three conventions: **UNFCCC, CBD, UNCCD.**
5.	Kyoto Protocol	1997	Commitment to reduce the emissions of six **Greenhouse Gases**.
6.	Bali Conference (COP-13)	2007	EU proposals called for **global emissions** to peak in 10 to 15 years and decline **well below half** of the 2000 level by 2050 .
7.	Copenhagen Summit	2009	Long-term goal of limiting the maximum global average temperature increase to not more than **2°C above** pre-industrial levels.
8.	The Cancun Agreements	2010	Establishment of **Green Climate Fund**.
9.	Durban convention	2011	**Financial grants** from developed to developing countries in mitigating climate change.
10.	Doha Climate Change Conference	2012	Financial and technological support and new **institutions** to enable **Clean Energy Investments** and **sustainable growth** in developing countries.
11.	Warsaw Climate Change Conference (COP-13)	2013	Establishment of an International mechanism to contain the loss and damage associated with climate change impacts
12.	Lima Climate Change Conference	2014	Pledges were made by both developed and developing countries that took the capitalization of the new **Green Climate Fund** (GCF) with an initial **$10 billion target**.
13.	Paris Climate Change Conference (COP-21)	2015	Long-term goal of keeping the global average temperature to well below 2°C compared to pre-industrial levels. Developed countries to raise finances to the tune of **$100 billion per year**.
14.	Marrakesh Proclamation	2016	Commitment to **full implementation of the Paris Agreement**.
15.	COP-23 (Bonn, Germany)	2017	The decision to limit the emission of carbon in a phased manner was taken. The concept of establishing **Green buildings**. **Talanoa Dialogue**.
16.	COP-24 (Katowice, Poland)	2018	Members of the conference did not agreed to **IPCC report** on **1.5°C**. Participatory nations agreed on the rules to implement **Paris Agreement**. **Silesia declaration** emphasized the need for **emission reducing policies** to ensure a just transistion of workforce that creates decent work and quality jobs.
17.	COP-25 (Madrid, Spain)	2019	A group of **31 countries** led by **Costa Rica** signed up to **San Jose Principles** for ensuring the integrity for **global carbon market**. **Kyoto carryover credits** will allow emission reduction credits to be traded on an open carbon market replacing Clean Development Mechanism (CDM).

26th COP of **United Nations Climate Change Conference** is scheduled to be held in **Glasgow, Scotland**, from **1 to 12 November, 2021**.

INDIAN HISTORY



D

History of Ancient India

Historical Sources of Ancient India

History

The word **History** (an English word) originates from the Greek word **Historia** which means **inquiry** or **knowledge acquired by investigation**. **Historical sources** help us to make a **proper, chronological** and **scientific assessment** of History.

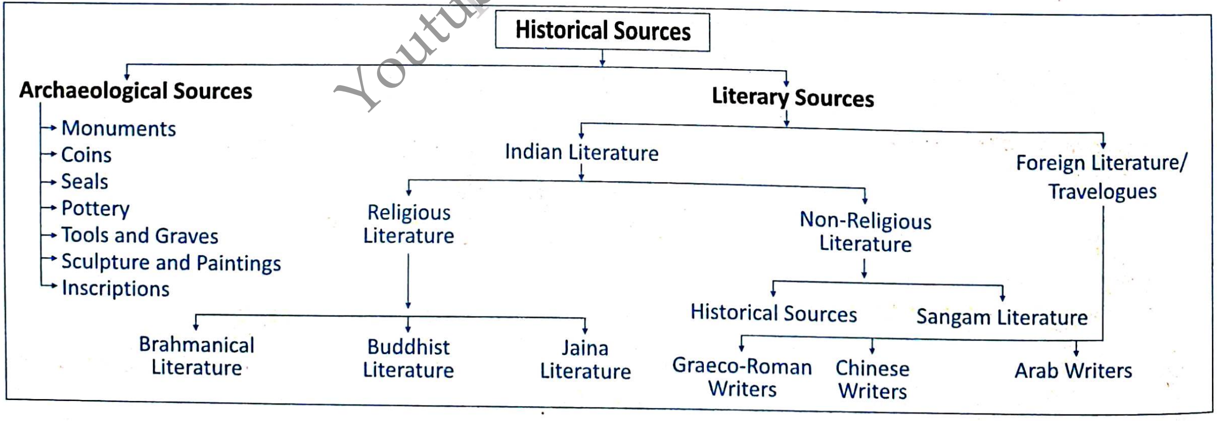
- Who is known as the **Father of History**? - **Herodotus** (Greek Historian)
- Which book is considered as the **first actual historical book** of ancient India? - **Rajatarangini** (by Kalhana, 12th Century)
- Which were the earliest **kind of coins** to be found? - **Punch marked coins**

The **study of coins** is known as **Numismatics**.

- Who is credited with the discovery of **Pre historic period** in India? - **Dr. Primrose** (1842)
- Who is the author of the book **Pre-Historic India** (Written in 1950) related to the **study of Pre-historic period** in India? - **British Archaeologist Stuart Piggott**
- Which word was used for India by **Chinese** in their **travelogues**? - **Tianzhu, In-tu**
- What is the **study of inscribed letters** known as? - **Epigraphy**

The **study of development** of **script** is known as **Palaeography**.

- Where is the **first mention** of the word **Bharat**? - **Hathigumpha inscription** (by King Kharvela)
- Who prepared the **first chronological history** of ancient India? - **V A Smith**


Historical Sources
Archaeological Sources
Monuments
Coins
Seals
Pottery
Tools and Graves
Sculpture and Paintings
Inscriptions
Literary Sources
Indian Literature
Foreign Literature/ Travelogues
Religious Literature
Non-Religious Literature
Historical Sources
Sangam Literature
Brahmanical Literature
Buddhist Literature
Jaina Literature
Graeco-Roman Writers
Chinese Writers
Arab Writers

- Which **sources** are used for knowing the **history of ancient** India? - **Religious texts, ancient texts, travelogues of foreign travellers and archaeological findings**
- Who deciphered **Brahmi script** for the **first time**? - **James Princep** (1837 AD)
- Who is considered as the composer of the **oldest ancient texts of India**, the **Vedas**? - **Maharishi Vedavyasa**
- Who is the **oldest King of India** according to ancient beliefs? - **Vaivashwat Manu**
- How is **Kharoshti script** written? - **From right to left**

The **Archaeological Survey of India** (ASI) is an organization under the **Ministry of Culture**.

- Which dynasty is mentioned in the **Vayu Purana**? **- Gupta dynasty**
- Which dynasty is described in the **Arthashastra of Kautilya**? **- Mauryan dynasty**
- In which text is the oldest **history of Jainism** found? **- Kalpasutra** (by Bhadrabahu)
- Which dynasty is mentioned in **Matasaya Purana**? **- Andhra Satavahana dynasty**
- Which dynasty is mentioned in **Vishnu Purana**? **- Mauryan dynasty**
- From **Narada Smriti** we find the information of which dynasty? **- Gupta dynasty**
- Which book is considered the **oldest** and an **evidental book** in **Smriti texts**? **- Manusmriti**

The first mention of **Mahabharata** is found in **Ashawalayana Grahasutra**. Initially it had only **8,800 verses** and it was known as **Jaya Sanhita**. Later, the verses increased to **24,000** and it became famous as **Bharata**. Lastly, because of **1 Lakh** verses in it, it was known as **Shatasahasri Samhita** or **Mahabharata**.

- In which **text** is **wife** called the **ardhangini** of her husband? **- Shatapatha Brahmana**
- Which ruler is related to **Hathigumpha inscriptions**? **- Kalinga ruler Kharvela**
- By which name is the **travellogue** of **Ibn-Batutta** famous? **- Rihlah** (Journey)
- In which university did **Hieun-Tsang** studied Buddhism? **- Nalanda Vishavidyalaya**
- Which **period's information** is found from **Buddhist rock inscriptions**? **- Shunga Period**
- In which book did **Hieun-Tsang** mentioned his **travel description**? **- Si-yu-ki**
- Who is the author of the **Arabian book Kitab-ul-Hind**? **- Al-beruni** (11th Century Iranian Scholar)

Moroccan traveller Ibn-Batutta visited **India** during the reign of **Mohammad Bin Tughlaq**. He was appointed the **Kazi** of **Delhi** by the later.

- Which kingdom did **Marcopolo** visited? **- Pandya kingdom**
- Manu Smriti was translated into English by which name? **- A code of Gentoo laws** (1776)
- When was the Asiatic Society of Bengal established? **- 1784 in Calcutta**
- Who established **Asiatic Society of Bengal**? **- Sir William Jones**
- Who translated Abhigyanashakuntalam into English in 1789? **- Sir William Jones**
- Who translated Bhagavad Gita into English? **- Charles Wilkins in 1785**
- When was an Asiatic Society of Great Britain was set up in London? **- 15 March, 1823**
- Ancient Indian scriptures were translated on a massive scale altogether in 50 volumes under the name of Sacred books of the East series by whom? **- Max Muller**

Indian Scholars were irked by the colonial distortions of India's past history and distressed by the contrast between decaying feudal Society of India and progressive capitalist **Society of England**. They were basically guided by **Nationalist ideas** of **Hindu revivalism** and were known as **Nationalist authors**.

- **Rajendra Lal Mitra** published some Vedic texts entitled as **Indo Aryans**.
- In **Maharashtra Ramkrishna Gopal Bhandarkar** and **Vishwanath Kashinath Rajwade** emerged as dedicated **scholars of social** and **political history** of India
- **In 1913, R. G. Bhandarkar** reconstructed the political history of **Deccan** of the **Satavahana** and **History of vaishnavism** and other sects.
- **Pandurang Vaman Kane**, a Sanskrit scholar Authored History of the **Dharmashastra** in five volumes (1930-1962) as an **Encyclopaedia** of **ancient social laws** and **Customs**.
- **Devdatta Ramakrishna Bhandarkar** published books on **Ashoka** and ancient Indian political institutions
- **Hemchandra Ray Chaudhuri** reconstructed the history of Ancient India from the time of **Mahabharata war** to the end of **Gupta Empire**

The **first written evidence** of **Sati** is found in **Eran inscription** (Sagar, Madhya Pradesh) of **Bhanugupta** in **510 AD**.

Important Indigenous Inscriptions and their related Rulers

Rulers	Inscriptions
• Samudragupta (Guptas)	Allahabad Pillar Inscription or Prayag Prashasti (In Sanskrit, composed by Harisena), Eran Inscription (Sagar, Madhya Pradesh), Nalanda Copper Plates Inscription, Gaya Copper Plates Inscription
• Rudradaman I (Saka)	Junagadh Rock Inscription (Sanskrit, Gujarat): It mentions that a dam on Sudarshan lake was constructed by Pushyagupta, a governor of Chandragupta Maurya.
• Gautami Balasri (Satavahanas)	Nasik Cave Inscription
• Skandagupta (Guptas)	Bhitari Stone Pillar Inscription (Hunas invasion), Junagadh Inscription (in Sanskrit, written in the praise of Lord Vishnu), Kahaum stone pillar inscription (Records the fashioning of 5 stone images of Tirthankara in the niches of the stone pillar)
• Yashodharman (Malwa King)	Mandsaur Stone Pillar Inscription (Mentioned about the guilds which served as banks for advancing loans and receiving deposits)
• Pulakeshin II (Chalukya)	Aihole Stone Inscription (Mentions defeat of Harsha in 618 AD by Pulakeshin II, composed by Ravi Kirti Vishnuvardhan)
• Kharavela (Kalinga)	Hathigumpha Inscription (1st description about India)
• Santivarman	Talagunda Stone Pillar
• Virapurusdatta	Nagarjunakonda Inscription
• Harshavardhan (Vardhans)	Madhuban Inscription, Banskhera Copper Plate Inscription
• Vijaysena (Sen dynasty)	Devapada Inscription
• Bhoja (Pratihara)	Gwalior Prashasti (Madhya Pradesh)
• Chandragupta-II (Guptas)	Mehrauli Iron Pillar Inscription (Delhi), Udaygiri Inscription
• Heliodorus	Besnagar Garuda Pillar Inscription
• Ashoka (Maurya)	Rummindei Inscription, Bhabru Inscription
• Kumaragupta I (Guptas)	Bhilsad Stone Inscription, Mandsaur Stone Pillar Inscription (composed by Vatsabhatti in Sanskrit), Damodarpur Copper Plate Inscription, Mathura Jain Insc.
• Pushyamitra Shunga	Ayodhya Stone Inscription (Dhanadeva-Ayodhya Inscription)
• Satakarni (Satavahanas)	Nanaghat Cave Inscription
• Rajaraja (Chola King)	Tanjore Inscription
• Dantidurga (Rashtrakuta King)	Ellora Cave Inscription
• Narasimhavarman (Pallava King)	Mallikarjuna Temples Stone Inscription (V. Narshima II - Hoysala king)
• Mihirbhoja (Pratihara King)	Gwalior Prashasti Inscription
• Toramana (Hun King)	Eran Varah Statue Inscription (M.P.) (first archaeological evidence about Sati-pratha)
• Rajendra I (Chola)	Tiruvalongadu Inscription

Youtuber General Gyan

- Who authored Early history of India? - **Vincent Arthur Smith** (1904)
- Who was the author of History and Culture of the Indian people? - **R.C. Majumdar**
- A History of South India was authored by whom? - **K. A. Nilkantha Shastri**
- Who authored Wonder That was India in 1951? - **A. L. Basham** (1954)
- Who authored the book An introduction to the study of Indian history? - **D. D. Kosambi** (1956)

D. D. Kosambi followed the materialistic interpretation of history derived from the writings of **Karl Marx**.

- The structures in South India where dead were buried along with their tools, weapons, pottery and other belongings in the graves encircled by big pieces of stone are known as? - **Megaliths**

Vikram Samvat began in **57 BC**, **Shaka Samvat** in **78 AD** and **Gupta era** in **319 AD**.

Stone Age

Phases of Stone Age

Palaeolithic (c.5,00,000 – 10,000 BCE)
Old Stone Age
(Hunters and Food Gatherers)

Mesolithic (c.9,000 – 4,000 BCE)
Middle Stone Age
(Hunters and Herders)

Neolithic (c.9,000 – 1,000 BCE)
New Stone Age
(Food Producers)

- **Early or Lower Palaeolithic** (c.5,00,000 – 50,000 BCE)
- **Middle Palaeolithic** (c.50,000 – 40,000 BCE)
- **Upper Palaeolithic** (c.40,000 – 10,000 BCE)

* A General time range is specified as there is a great deal of variation in the dates for different sites.

Question	Answer
Who is credited for starting the **Stone Age research**?	- **Robert Bruce Foote** (1863)
What is the initial **time period of human history** known as?	- **Paleolithic Age**
Which material was used for making **tools** and **weapons** in ancient India?	- **Stone**
According to ancient Indian geology, India was a part of which island?	- **Jambudvipa**
Where is the **first evidence of humans** found in India?	- **Hathnora** (a village on the bank of Narmada river, MP)
Which archaeological site has **evidences** from **Stone Age** to **Harappan civilization**?	- **Mehrgarh** (Pakistan)
Which **archaeological site** has evidence of **ploughed fields**?	- **Kalibangan** (Rajasthan)
Which was the **first domesticated animal** of the **Stone Age**?	- **Dog**

Youtuber General Gyan

3 phases in the Palaeolithic age based on the nature of stone tools and change in climate

Phases	Tools	Major Sites	Importance
• **Early Palaeolithic** (Lower Pleistocene)	Choppers, hand-axes, cleavers	Soan River (Punjab, Pakistan), Kashmir, Chotanagpur plateau, Narmada valley, Andhra Pradesh, Karnataka, Thar desert and Didwana (Rajasthan), Belan valley in Mirzapur district (Uttar Pradesh), rock shelters of Bhimbetka.	**Cultural and Technological traditions :** • **Soan Culture :** Deposits of pebble tools and choppers. • **Acheulian Culture :** Deposits of hand-axes and cleavers.
• **Middle Palaeolithic** (Middle Pleistocene)	Scrapers, borers, blades, points made of flakes	Nevasa (Maharashra), Didwana and Budha Pushkar (Rajasthan), Bhimbetka (M.P.), Narmada, Godavari, Krishna, Yamuna and other river Valley etc.	• Crude pebble industry in strata contemporary with Third Himalayan Glaciation. • 200 Rock Shelter caves are located in Bhimbetka hills having thousands of paintings. • The age of Neanderthal Man (early man).
• **Upper Palaeolithic** (Upper Pleistocene)	Blades and Burins Bone tools also	Kurnool (A.P.), Meralbhavi (Karnataka), Baghor-I and Baghor-III (Central M.P.), southern U.P, south Bihar plateau, Gujarat, Patne (Maharashtra), Cave shelters at Bhimbetka.	• Appearance of Homo Sapiens. • Harpoon, Blade tools found from Renigunta (Andhra Pradesh). • Climate became less humid.

Sir John Lubbac was the first to use the word **Neolithic** in **1865**.

Mesolithic Age : Tools, Pottery and Art

Microlithic Tools

- Made up of chipped and flaked stones. Length of tools varied from 1 cm to 8 cm.
- Tools include blades, points, lunate bones, trapezes, scrappers, arrowheads, geometric and non-geometric tools.
- Tools were capable of being used as combination tools by hafting them in curved wood or bone.
- Epi- Palaeolithic term is used to signify the transitional stage of tools which are smaller than those of the upper paleolithic but smaller than microliths.

Pottery

- Reported from a number of excavated sites like Langhanj (Gujarat), Bagor (Rajasthan), Nagarjunakonda and Chopani Mando (Uttar Pradesh).
- Pottery was wholly hand-made and usually coarse grey sometimes comprises of incised and impressed designs.

Art (Painted Rock Shelters)

Sites:

- Mirzapur district and Murhana Pahar in Uttar Pradesh.
- Bhimbetka caves, Adamgarh, Lakha Juar in Madhya Pradesh.
- Sundargarh and Sambalpur in Orissa.
- Kapugallu in Telangana and Ezhuthu Guha in Kerala.

Features:

- The Mesolithic era initiated rock art in pre-History. In 1867, the first rock paintings in India have been found at Sohagighat (U.P.)
- Paintings are generally executed in red ochre but sometimes bluish green, yellow or white colours also had been used.
- Rhinoceros hunting is depicted in the caves of Adamgarh and no snakes are depicted in paintings.
- 29 species of animals are depicted, including the cheetah (this occurs most often), tiger, crabs, deer, scorpions, panther and squirrel.

◆ What is the name of **first human** like species **Homo sapience** which was different in species? **- Pithacanthropus**

◆ How are **Megalithic stone or Tomb** monuments identified? **- By the burial of the dead**

◆ The **oldest evidence** of settled **human life** is found at which place? **- Mehrgarh**

◆ According to **excavationary evidences, origin of animal husbandry** is considered in which period? **- Mesolithic age** (9000-4000 B.c)

◆ Where are the direct evidences of **animal husbandry** found in the **Mesolithic age**? **- Adamgarh**

◆ When was **agriculture practised** for the **first time** in **human history**? **- Neothilic period** (4000-2500 B.C)

◆ Which is the **first food grain** to be used by **humans**? **- Barley**

◆ What is the other name of **Chalcothic Age**? **- Copper age**

◆ Who was the first director general of **Archaeological survey of india** ? **- Alexander Cunningham** (1861)

◆ Where are the **maximum number** of cave paintings of **Paleolithic period** are found ? **- Bhimbetka** (M.P)

◆ From which period are the **first evidences of pottery** found? **- Neolithic period**

◆ **Pebble tools** belonged to which period ? **- Lower Paleolithic period**

◆ Who was the director general of **Archaeological Survey of India**? **- John Marshall** (1909-1928)

◆ Which culture is famous as **Timbavati culture** ? **- Ahar culture**

◆ **Mesolithic tools** are related to which Age ? **- Mesolithic Age**

◆ The tools found from **Belan Valley** are related to which period? **- Early or Lower Paleolithic Period**

◆ Which period of history describes humans as **hunters** and **food gatherers**? **- Paleolithic Period**

The people of **Chalcolithic Civilization** buried the dead in their homes in **North-South direction** in **Maharashtra**.

◆ Which are the two most known ancient Mesolithic sites in India? **- Mahadaha and Sarai Nahar Rai**

◆ When does the evolution of present day **human Homo sapiens** took place? **- Late or Upper Paleolithic Period** (40000 BCE-10000 BCE)

◆ When was the use of **fire started** by **humans**? **- Neolithic Age**

◆ Which is the only **source of fossils** in **India**? **- Shivalik Himalayas**

The **chalcolithic site** of **Navdatoli** is excavated (1957-59) by **H.D. Sankalia. Navdatoli** is located presently in **MP.**

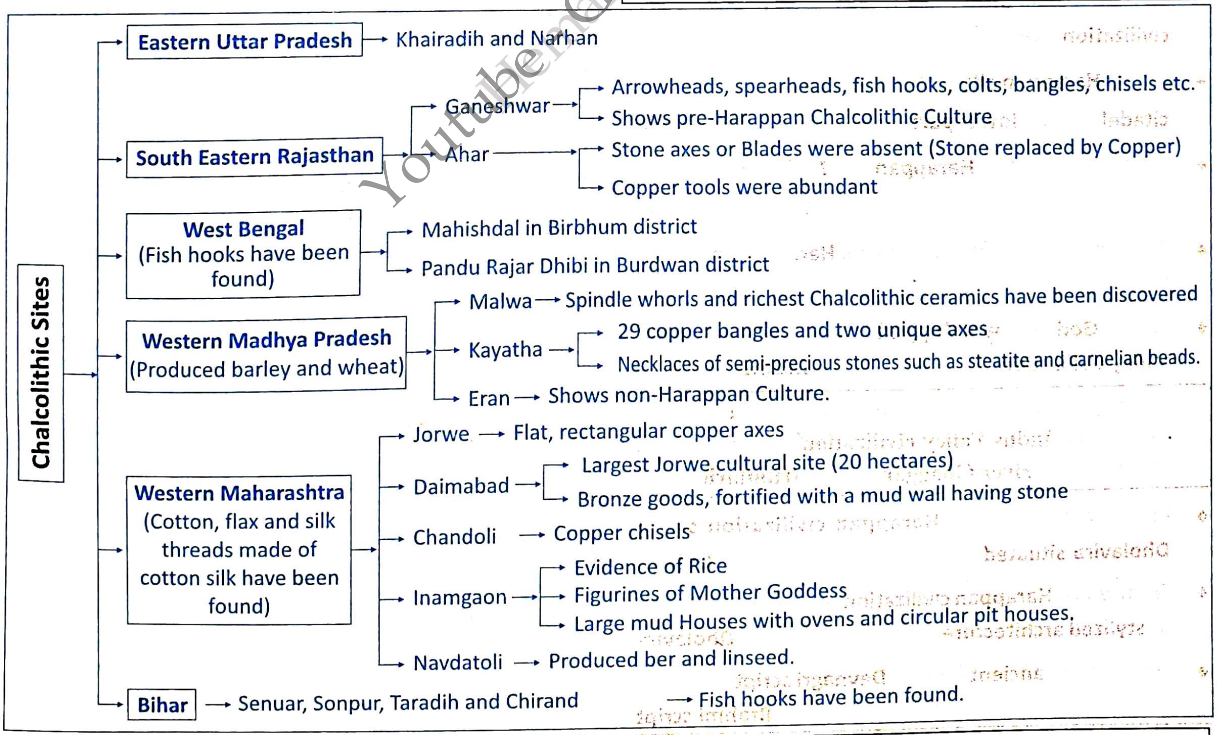
Neolithic Sites

Sites	Specifications
Burzahom (Kashmir)	The place of **Birch**. **Domestic dogs** were buried along with their masters in their graves. Used tools and weapons made of **polished stone** and **bones**.
Gufkral (Kashmir)	Practiced both **agriculture** and **domestication of animals**. Tools and weapons of **polished stone** and **bones**.
Mehrgarh (Pakistan)	Produced **cotton** and **wheat**. Lived in **mudbrick houses**.
Mahagara (Belan Valley UP)	Plan of a village in conjunction with that of a **cattlepen**. A variety of rice rounded celts, microliths, hammerstones, bones of **domesticated animals**.
Koldihwa (Belan Valley UP)	The site represents **3 occupational levels** : **Neolithic**, **Chalcolithic** and **Iron Age**. **Oldest evidence** of **rice cultivation**.
Sangankallu (Karnataka)	**Ash mounds** have been found.
Piklihal (Karnataka)	Domestication of **sheeps**, **goats** and **cattles**.
Chopanimando (Uttar Pradesh)	**Beehive huts**, well designed pottery, **microliths** and **handmade pottery**.
Sarutaru (Assam)	**Stone Axes, shouldered celts, cord, basket marked pottery**.
Chirand (Bihar)	Used tools and weapons made of **bone**.
Daojali (Assam)	**Agriculture** and **Domestication** of **Animal**. Cord marked Pottery.

- ♦ From where is the oldest evidence of **agriculture found** on the **Indian sub continent** ? **- Mehergarh**
- ♦ From which **archaeological site tools** made of bones were found? **- Sarai Nahar Rai** (U.P.)

Khetri Coppermines (Rajasthan) and **hilly regions** of **Almorah** (Uttarakhand) were considered to be source of metal for **copper objects/hoards** of **Chalcolithic Age**.

Mohenjo-daro, **Chanundaro**, **Harappa** and **Kot Diji** are located in present day **Pakistan**.



Chalcolithic Sites

- **Eastern Uttar Pradesh** → Khairadih and Narhan
- **South Eastern Rajasthan**
  - Ganeshwar
    - Arrowheads, spearheads, fish hooks, colts, bangles, chisels etc.
    - Shows pre-Harappan Chalcolithic Culture
  - Ahar
    - Stone axes or Blades were absent (Stone replaced by Copper)
    - Copper tools were abundant
- **West Bengal** (Fish hooks have been found)
  - Mahishdal in Birbhum district
  - Pandu Rajar Dhibi in Burdwan district
- **Western Madhya Pradesh** (Produced barley and wheat)
  - Malwa → Spindle whorls and richest Chalcolithic ceramics have been discovered
  - Kayatha
    - 29 copper bangles and two unique axes
    - Necklaces of semi-precious stones such as steatite and carnelian beads.
  - Eran → Shows non-Harappan Culture.
- **Western Maharashtra** (Cotton, flax and silk threads made of cotton silk have been found)
  - Jorwe → Flat, rectangular copper axes
  - Daimabad
    - Largest Jorwe cultural site (20 hectares)
    - Bronze goods, fortified with a mud wall having stone
  - Chandoli → Copper chisels
  - Inamgaon
    - Evidence of Rice
    - Figurines of Mother Goddess
    - Large mud Houses with ovens and circular pit houses.
  - Navdatoli → Produced ber and linseed.
- **Bihar** → Senuar, Sonpur, Taradih and Chirand → Fish hooks have been found.

The **first rock paintings** in India were discovered at **Sohagighat** (Kaimur hills, U.P.) in **1867**.

Harrapan Civilization/Indus Valley Civilization

- What is the most convinced **time period** for **Harappan Civilization**? - **2500-1750 B.C**
- **Harappan civilization** is related to which **civilization**? - **Indus Valley Civilization**
- Which script has been found in **Harappan Civilization** ? - **Pictographic script**
- What is the **main source** of information about **Harappan Civilization**? - **Archaeological excavations**
- What is the **literal meaning** of the word **Mohenjodaro**? - **Mound of the dead**
- When did **idol worship** started? - **Pre Aryan Period** (Statue of Mother Goddess Mohanjodaro)
- **Indus Valley Civilization** is related to which age? - **Proto Historian Age**

The people of **Indus Valley Civilization** mixed **copper** with **tin** for the **first time**. Hence, also known as **Bronze Age Civilization**.

- Where is **Rangpur, contemporary** to **Harappan civilization** located ? - **Saurashtra** (Gujarat)
- Which **Harappan city** was surrounded differently in it's **citadel** and the **lower part**? - **Kalibangan**
- Who excavated the **Harappan** and **Mohenjodaro** sites? - **Sir John Marshall**
- Which metal is not found yet in the **Harappan civilization** sites? - **Iron**
- Which **God** was **worshipped** by the people of **Indus Valley civilization**? - **Mother Goddess**

According to the archaeological sources, **Banawali** (Haryana), the **Indus Valley civilization** site was situated on the valleys of **river Ghaggar** and it's **tributaries**.

- In which state is the **Harappan civilization site** of **Dholavira situated**? - **Gujarat**
- From which **Harappan civilization** site are the evidences of **stylized architecture** found? - **Dholavira**
- Which is the **ancient** form of **Devnagri script**? - **Brahmi script**

Material	Site or Source
Shell	Nageshwar and Balakot
Lapis lazuli	Shortughai
Carnelian	Lothal
Steatite	South Rajasthan
Copper	Rajasthan and Oman

- What was the most common shape of **Harappan civilization coins**? - **Square**

Horse was not inscribed on the coins of **Harappan civilization sites**.

- Where was the **cotton first cultivated** in the world? - **India**

The **Egyptian civilization**, a contemporary of **Indus Valley civilization** was situated on the **banks of river Nile**.

- Where do we find the **bullock currency** in **Indus Valley civilization**? - **Mohenjodaro**

Sumerian civilization was the first to develop **writing style**.

- What is the major factor for keeping **Indus Valley civilization** as older than **Aryan civilization**? - **Earthenware**
- Which type of **earthenware** in India was described as a symbol of second urbanization? - **Northern Black Polished ware**
- Where do we find the **oldest evidence** of **silver in India**? - **Harappan civilization**
- Which material is primarily used in the **formation** of **Harappan coins**? - **Steatite**

North: Shortughai (Afghanistan)

West: Sutkagendor, located on River Dask/Dastkaur (Baluchistan)

Harappan Civilisation

East: Alamgirpur, located on River Hindon (Saharanpur, U.P.)

South: Daimabad, located on River Pravara (Maharashtra)

Lothal is also known as **Mini Harappa** or **Mini Mohenjodaro**. In its eastern part we find the evidence of **Godivara**.

Major Sites of Indus Valley Civilization and related facts

Site	Excavator	Year	River	Evidences
• **Harappa** **Montegomari, Pakistan**	R.D. Sahni, Wheeler, M.S. Vatsa	1921	**Ravi**	• **Citadel** (raised plateform), **6 granaries** in a row covering an area of **275 sq. m** (called city of Granaries). • **Coffin burial** and **cementary**, **Single room barracks**, Bronze pots and **891** seals.
• **Mohenjo-daro** **Larkana, Pakistan**	R.D. Banerjee, Mortimer Wheeler	1922	**Indus**	• Literally means **Mound of the Dead** in **Sindhi**. • Great Bath, **Bronze dancing girl statue**, **Seal of mother goddess**, **Steatite statue** of a man **with a beard** • **Unicorn seals** (Most found seals) and **Pashupathi** (Shiva) seal, **Woven cloth**, **Shell scale**, three cylindrical seals and a seal from Iran.
• **Lothal** **Ahmedabad, Gujarat**	Rangnath Rao	1955 & 1962	**Bhogwa**	• City was divided into **6 sections**, Trade centre for gems and ornaments. • Entry to the houses were directly connected to the main street, rice husk, • Button seal, fire altars and ivory scale for measurement, Artificial Dockyard (126 × 37m) used to repair and manufacture ships. • Bead making factor and a terracotta horse.
• **Chanhudaro** **Sind, Pakistan**	E.Mackay, N.G. Majumdar	1931	**Indus**	• Only city **without citadel** and no **fortified structure**. • Inkpot, Lipstick, bead making factories have been found.
• **Kalibangan** **Hanumangarh, Rajasthan**	Amlanand Ghosh, B.B.Lal, B.K. Thapar	1953 1960	**Ghagghar**	• Many houses had wells, Furrows indicating the **ploughed field**. • **Decorative bricks** used in flooring and fire altars, Bones of Camel and small circular pits
• **Rakhigarhi** **Hisar, Haryana**	Sooraj Bhan	1969	**Ghagghar**	• Largest Harappan site of now Cornupia of **Artefacts, potsherds, fish net designs, terracotta figurines** belonging to mature Harappan phase.
• **Banawali** **Hisar, Haryana**	R.S. Bisht	1973	**Saraswati**	• Shows **Pre + Mature + Late Harappan Culture**, Plough (Clay Model), **Fire altars** and **Seals** in lower towns have been found.
• **Rangpur** **Kathiawar, Gujarat**	S.R. Rao	1954	**Bhadar**	• Remains of **Pre + Mature Harappan Culture**, Plough (Clay Model), **Fire altars** and **Seals** in **lower towns** have been found.
• **Alamgirpur** **Meerut, U.P.**	Yajya Dutt Sharma	1958	**Hindon**	• Shows **Late Harappan Culture**, Pottery and beads are the main findings.
• **Sutkagandor** **Baluchistan, Pakistan**	A.Stein, George Dales	1927 & 1962	**Dashak**	• A trade point between **Harappa** and **Babylon**.

Barter System was the prevalent exchange mode in **Harappa Period**.

Vedic Period

- What does the **word Veda** means? - **Knowledge**
- Which is the **oldest Veda**? - **Rigveda**
- The **word Arya** refers to? - **The noble one**
- How many **divisions** and **hymns** are there in **Rigveda**? - **10 divisions** (Mandalas) **and 1028 hymns**
- For whom is the **word Trayi** is used for? - **Three Vedas** (Rigveda, Yajurveda and Samaveda)
- Which **Veda** consisted of **rituals** to be accompanied while **worshipping** and **performing yajnas**? - **Yajurveda**
- Which **Veda contains charms** and **spells** to ward off **evils** and **diseases**? - **Atharva Veda**
- **Upanishad** is based on which **Indian tradition**? - **Indian Philosophical tradition**
- Which **Rigvedic division** is totally dedicated to **Soma God**? - **Ninth division/Mandala**
- Which **Upanishad** contains a conversation between **Yama** and **Nachiketa**? - **Kathopanishad**
- The king **Ashwapati** during **Upanishad period** was the ruler of which place? - **Kekaya Kingdom**
- Which **vedic literature** mentions about the **means of salvation**? - **Upanishad**
- Which river is identified as the vedic river **Askini**? - **Chenab**
- Which river in mentioned for the **maximum number** of **times** in **vedic literature**? - **Indus** (Sindhu)
- Which **Veda** has the collection of **melodies** and **chants**? - **Samaveda**

Various Political Functionaries

Name	Function
Vrajapati	Officer-in-charge of pasture land
Purohita	Priest of highest order
Jivagribha	Police official
Senani	Supreme commander-in-chief
Gramini	Head of the village
Kulapati	Head of the family
Spasas/Dutas	Spies and Messengers
Bhagadugha	Revenue collector
Madhyamasi	Mediator for dispute solving
Palagala	Messenger
Sangrihitri	Treasurer
Suta	Charioteer & Court Minister
Kshatri	Chamberlain
Sthapati	Chief Judge Athapati
Mahishi	Chief Queen
Govikartana	Keeper of forests & games
Akshavapa	Accountant
Takshan	Carpenter

- The **first evidence** of **caste system** is found in? - (Purusasukta), **Tenth Mandala of Rigveda**
- Which **two institutions** controlled the king during the **pre vedic period**? - **Sabha and Samiti**
- Who is the most important divine/God in the **Rigveda**? - **Indra** (Purandara)
- In **Rigvedic period**, the word **Nishka** was used for **jewellery** but during later period this was used for? - **Coins**

Vedas	Brahmanas	Upanishad	Aranyakas	Mantras	Priest	Upaveda
Rig	Aitareya, Kaushitiki/ Sankhyana	Aitareya, Kaushitiki	Aitareya, Kaushitiki	10,552	Hotri Kotri	Ayurveda (Related to medical Science)
Sama	Panchvimsh/Tandya, Jaiminiya	Kena, Chandogya	Jaiminiya, Chandogya	1,875	Udgatri	Gandharva or Natya Shastra (Related to Music)
Yajur	Taittriya, Shatapatha	Taittriya, Katha Isa, Brihadaranyaka	Taittriya	1,975	Adhvaryu	Dhanurveda (Related to War)
Atharva	Gopatha	Mandukaya, Mundaka Prashan	–	5,977	Brahma	Shilpaveda (Related to Architecture) and Shastrashastra (Related to Military), Arthasastra

The **Ahur Mazda** finds mention in the **Parsi** literature **Zed Avesta, which is similar to Rig Veda**.

- Which literature finds the mention of the tradition of Purushamedha (Human sacrifice)?
  - **Shatapatha Brahman**
- Which **inscription records** the coming of **Aryans** from **Iran** in **India** ? - **Boghaz-koi inscription**
- Which region was known as **axis of Aryan culture** in **Post Vedic Age**? - **Magadha & Anga**
- The word **Gotra** (clan) was used for the first time in which age? - **Rigvedic Age**

> The **Rigveda** is the earliest text of the **Indo-European languages**. It consists of **ten mandalas** or **books**, of which **Books II** to **VII** form its **earliest portions**.

- The **rigvedic people** believed in
  - **The cult of sacrifice and rituals and formulae**
- Along the banks of which river was the **Battle of Ten Kings** fought ? - **River Parushni** (Ravi)

> The **Battle of ten kings** finds its mention in the **seventh mandala of Rigveda**.

- What was the **source of livelihood** for **Aryans**?
  - **Animal husbandry and agriculture**
- The word **Yava** mentioned in the **Rigveda** is used for which food grain? - **Barley**
- Which **Veda** finds the mention of practice of **levirate** and **widow remarriage**? - **Rigveda**
- Which **Veda** finds the mention of **Ayurveda**?
  - **Atharvaveda**

> **Sabha** and **Samiti** are mentioned as **two daughters** of the **King** in **Atharvaveda**.

- Which literature finds the mention of **Gayatri Mantra** (hymns)? - **Third mandala of Rigveda**
- Who was considered as the **God of war** in **Rigvedic period**? - **Indra**
- Who composed the **Gayatri Mantra**? - **Vishwamitra**
- In which language was the epic **Bhagwad Gita** written originally? - **Sanskrit**
- What is the **script of Rigveda**? - **Brahmi**

Major Deities in Rig Vedic Age

Indra	**Most prominent** God dedicated with **250 Rig Vedic hymns**. Also called **Purandara** (Breaker of Forts), **Vritrahan** (slayer of vritra) and **Maghavan** (bounteous).
Agni	**God of fire**. Intermediary between people and God (200 Rig Vedic hymns were devoted to him).
Soma	**God of plants** (ninth mandala of Rig Veda comprises 114 mantras dedicated to soma). **Intoxicating drink** was called **Soma**.
Varuna	**Personified water** and **upholder of natural order**. Fourth most important of all Rig Vedic gods (Many Rig Vedic hymns devoted to him).
Yama	Lord of **Death**
Rudra	**God of animals** & **guardian** of **healing herbs** and resembled Greek **God Apollo**. Identified as **proto-Shiva**.
Pushan	**God of cattles** in early phase who later became a deity of **Shudras**.
Marut	**Rudra's son**, who personified storm.
Aditi	**Mother** of the **Gods**.
Usha	Goddess of **Dawn** (300 Rig Vedic Hymns).
Vishnu	**Preserver** and **protector** of people in **later Vedic phase**, since they shifted from a **semi-nomadic life** to a **settled one**.

- From which **literary source** is **Satyameva Jayate** taken?
  - **Mundaka Upanishada**
- **Rice** was known by which name in Vedic era? - **Vrihi**
- Which brahmana text has the **Theory of origin of King**?
  - **Aitareya Brahmana**
- The book **Sulvasutras** is related to which subject?
  - **Geometry and measurements**
- **Asato ma Sadagamaya phrase** is taken from which **Upanishad**? - **Brihadaranyaka Upanishad**
- Which subject is **Charak Samhita** related to?
  - **Medical sciences**
- Where can we find the **mention of dialogue** between **Gargi and Yajnavalkya**? - **Brihadaranyaka Upanishad**
- What were women termed in vedic age as who stayed unmarried for a **long time**? - **Amaju**

> The **river Saraswati** is mentioned as the **holiest river** in **Rigveda**. It is also written as **Naditama** or **mother of rivers**.

Jainism

- Who was the **founder** of **Jainism**? - **Rishabhadev**
- The word **Tirthankar** is related to which sect? - **Jainism**
- Which religion is related to the **doctrine of Anekantavada**? - **Jainism**
- In Jainism, the **destruction of karman** (a physical substance that binds itself to individual souls and determines their fate) is known as? - **Nirjara**
- What is the meaning of **samwar** in **Jainism**? - **Stoppage of the material karmas in the soul consciousness**

> **Bahubali Gomateshwar statue** at **Shravanabelagola**, Karnataka is the **tallest monolithic statue** in the **world**, build by the **minister** and **commander** of the **Ganga Dynasty, Chavundaraya**.

- Which religion is associated with **Triratna** (right knowledge, right faith and right action) or the **Three Jewels**? - **Jainism**
- Who was the founder of **Ajivika school** of **Indian philosophy**? - **Makkhali Gosala** (5th Century BCE)
- Who advocated the concept of **Anuvrata**? - **Jainism**
- Which religion had **Yapaniya sect**? - **Jainism**
- In which language were **initial Jain literatures** written? - **Ardhamagadhi** (Jain Prakrit)
- Which place is associated as a **Jain sacred** place related to **Parsavnath**? - **Sammed Shikhar** (Jharkhand)
- Who was the founder of **Swetambara sect** after the **first division** in Jainism? - **Sthulabhadra** (Sthalabahu)
- Which religion is associated with **Doctrine of Syadvad**? - **Jainism**

Jaina Councils		
	Ist Council	**IInd Council**
Year	**310 BC**	453 or 466 AD
Place	**Pataliputra**	Vallabhi (Gujarat)
Achievement	Compilation of **12 Angas** to replace **Purvas**	**Final compilation of 12 Angas** and **12 Upangas.**
President	**Sthulabhadra**	**Devarddhigani**

- Who was the last **Jain tirthankar**? - **Vardhaman Mahavir (24th)**

Life Events of Vardhamana Mahavira

↓

Born

540/599 BC (Village Kundagrama near Vaishali)
Father **Siddhartha** (head of Jnatrika : kshatriya clan)
Mother **Trishala** (Sister of the Lichchhavi chief)
His other names are : a) **Jitendriya**, b) **Arihant** (worthy).

↓

He renounced the world at the age of **30 years** in the search of truth, becoming ascetic.

↓

Wandered for **12 years** —practiced→ Austerities, Fasting, Meditation

↓

Attained **Kaivalya** (Juan) on the banks of **Rijupalika river** (outside the town of Jrimbhika grama) and in the field of a householder named **Samaga** at the age of **42 years.**

↓

Passed away and became **SIDDHA** (fully liberated) at the age of **72 years** in **468/527 BC** at **Pavapuri** near **Patna.**

(Various traditions give different chronology of life events of Mahavira)

- Which place in **Uttar Pradesh** is related to both **Buddhism and Jainism**? - **Kaushambi**
- Which Jain writing mentions **16 Mahajanapadas**? - **Bhagwati-Sutra**
- For whom were the **Barabar caves** made? - **Ajivikas**
- What was the **fifth doctrine** added by **Mahavira** in the **5 doctrines** of Jainism? - **To observe continence** (brahmacharya)

> Jainism taught **five doctrines** : **(I)** do not commit violence **(II)** do not speak a lie **(III)** do not steal **(IV)** do not acquire property,and **(V)** observe continence (brahmacharya)

- Who was the author of **Jain literature Kalpasutra**? - **Bhadrabahu**
- Which is the oldest evidence of **idol worshipping** in **Jainism**? - **Hathigumpha inscriptions** (Odisha)

> **Jain monastic order** was bifurcated into : **Shvetambaras** (led by Sthalabahu) and **Digambaras** (led by Bhadrabahu).

Buddhism

- The teachings of **Mahatma Budhha** were compiled in the form of which **literary source?** - **Tripitaka**
- What does **Mahabhinishkraman** refers to? - **The event of leaving house of Buddha**
- Which **Buddhist sect** worshipped **Buddha as God?** - **Mahayana Sect**
- In which **Buddhist council**, did **Buddhism** separated into **Sthaviravadins** and **Mahasanghika**? - **Second Buddhist Council**
- What does **Upasampada** mean in Buddhism? - **Approaching or nearing the ascetic tradition**
- In whose **tenure** did Buddha visited **Kaushambi**? - **Udayin**

In **Buddhism**, the philosophy of **Sunyawada** and **Vijnanavada** developed which influenced the **great Shankaracharya** as well. Because of his staunch opposition to **Buddhism**, he was also known as **Prachann** (Hidden) **Buddha**.

- What are the four **noble truths** of **Buddhism**? - **The truth of suffering, the truth of the cause of suffering, the truth of the end of suffering, and the truth of the path that leads to the end of suffering**
- Who is the author of **Buddhacharita**, also famous as **Ramayana of Buddhism**? - **Aswaghosa**
- Which **Ashokan inscription** records the birth of **Buddha** in **Lumbini**? - **Rummindei** (Nepal), **Lumbini inscription**
- What is the fundamental difference between **Hinayana** and **Mahayana school** of **Buddhism**? - **Idol worship**

The maximum number of **sculpture of Buddha** is made in **Gandhara style** while the **first Buddha** was made in **Mathura style** of **architecture**.

- Which event of **Buddha's life** is **symbolized** as **wheel**? - **The first sermon**
- Which event is related to the **Mahabodhi temple** of **Gaya in Buddha's** life? - **Enlightenment** (Nirvana)
- The preachings of **Buddha** were related to - **Liberating sentiment beings from sufferings**

Important Facts related to Gautam Buddha	
Year of Birth	– 563 B.C.
Birth Place	– Lumbini, Kapilvastu modern-Rummendei, Nepal
Also known as -	– Sakyamuni, Tathagat
Father	– Suddodhana
Mother	– Mahamaya
Childhood name	– Siddhartha
Foster mother	– Prajapati Gautami
Spouse	– Yashodhara
Son	– Rahul
Charioteer	– Channa
Horse	– Kanthaka
Left home at the **29** and attained **enlightenment** at **35**.	
Milkmaid (who fed him Kheer)	**Sujata**
Enlightenment	– Bodh Gaya (under Pipal tree)
First Sermon	– Deer Park (Sarnath)
Disciples	– Anand & Upali
Sermons	– Sakya, Kashi, Magadha, Anga, Malla, Vajji, Koshala
Mahaparinirvana	– 483 B.C., Age - 80 years, Place - **Kushinagar** (U.P.)

- Who wanted to become the head of the **Buddhist Sangh** during **Buddha's lifetime?** - **Devadatta**
- In which period was **Nalanda University** established? - **Gupta Period**
- What is related to the concept of **Ashtangik Marga** (the eightfold path)? - **Path to enlightenment**
- At which place did **Buddha** allowed women into the **Sangha**? - **Vaishali**
- Which **Buddhist** sect did **Nagarjuna** belonged to? - **Mahayana Buddhism** (Madhyamika school)
- Where is the **world's tallest Shanti Stupa** (Peace Pagoda) situated? - **Rajgir** (Bihar)
- Who build the **80 feet statue of Buddha** at **Bodhgaya**? - **Japanese**

Ashoka had sent his **son Mahendra** and **daughter Sanghamitra** to **Sri Lanka** to spread Buddhism. Their names are mentioned in the Buddhist text **Mahavamsa** written in **Sri Lanka**.

Buddhist Councils

S.No.	Year	Place	Presided	King
First	483 B.C.	**Rajgriha**	Mahakasapa	Ajatshatru
Second Kalashoka	383 B.C.	**Vaishali**	SabaKami	
Third	246 B.C. 250 B.C	**Pataliputra**	Moggali putta Tissa	Ashoka
Fourth	100 B.C.	**Kundalavana Kashmir**	Vasumitra and his deputy	Kanishka

- Who was the **first proponent** of the theory of **Sunyata**? - **Nagarjuna**
- For which reason is **Nava Nalanda Mahavihara** famous for? - **Pali Research Center**
- What was the common doctrine in which **Buddhism** and **Jainism** believed? - **Karma and the theory of reincarnation**
- During whose tenure **Buddha** was started being **worshipped as god**? - **Kanishka**
- During which period was statue of **standing Buddha** made? - **Kushana Period**
- Which **Indian Buddhist** monk was sent to **China** in **first century AD**? - **Nagarjuna**
- Which **Magadha emperor** built **Veluvana Mahavihara** for **Buddha's stay**? - **Bimbisara**
- Which four events in the life of **Buddha impacted** him the most?
  - **An old man, a sick person, a corpse being carried to cremation and a monk in meditation beneath a tree**
- Who is known as the **Light of Asia**? - **Buddha**
- Who was the first woman to be allowed in **Buddhist Sangha**? - **Prajapati Gautami**
- Where did **Buddha** spent the last **rainy season** of his life? - **Vaishali**
- How is **Buddha** depicted in **Gandhara style**? - **Greco-Roman style**
- Who observes the day of observance known as **Uposatha**? - **Buddhist monks**
- What is the other name for **Bodhisattva Avalokiteshvara** of **Mahayana Buddhism**? - **Padmapani**

Symbols related to life events of Buddha

Event	Symbol	Event	Symbol
• Conceiving	**Elephant**	• Youth	**Bull**
• Birth	**Lotus**	• Prosperity	**Lion**
• Nirvana	**Footsteps**	• Death	**Stupa**
• 1st Sermon	**Chakra**	• Renunciation	**Horse**
• Enlightenment	**Bodhi tree**		

- Which is the **largest Buddhist monastery** in India? - **Tawang Monastery** (Arunachal Pradesh)
- What is depicted from **Dharmachakraparvartan** in **Buddha's life**? - **The first sermon of Buddha**
- Who is also known as **Buddha's sangini** in **Vajrayana Buddhism**? - **Tara**
- What are the **three Jewels** of **Buddhism**? - **Buddha, Dhamma and Sangha**

Youtuber General Gyan

Sects of Buddhism

Hinayana (Theravada)	**Mahayana**	**Vajrayana**
Hinayana literally means the **lesser Path** and **Theravada** means **Doctrine of the Elders**.	It literally means the Greater Path. Credit to find this sect goes to **Nagarjuna**.	Literally means **Vehicle of Thunderbolt**. Vajrayana or **Diamond Vehicle** is also referred as **Mantrayana, Tantrayana**.
Its scriptures are in **Pali language**	Its scriptures are in **sanskrit language**	**Highly symbolic language samdhya-bhasa** or **Twilight language**.
It is an **orthodox school**. Theravada was the **original school** of Buddhist philosophy.	It is the **heterodox school** of Buddhist philosophy. It has two chief philosophical schools: the **Madhyamika** & **Yogachara**	Followed in **eastern India** in the **8th centuary**, established in **Tibet** in the **centuary**, established in **Tibet** in the **11th century**.

Buddha's last meal was **Sukara Maddava** offered by a **Pava Jeweller Chundakarmara**.

History of Medieval India

Turkish-Arabic Invasion in India

- Which place did the **first Muslim invader** of India belong to? **- Arab**
- Who was the leader of the **first Muslim invasion** in **711 AD** (that failed)? **- Ubaidullah**
- Who was the **first Muslim invader** to successfully invade India in **712 AD**? **- Mohammad Bin Qasim**

In **712 AD**, **Mohammad Bin Qasim** defeated **Dahir** the **King of Sindh** and conquered the **territory of Deval Port**.

- Which was the last place to be conquered by **Mohammed Bin Qasim**? **- Multan** (Swarnanagri)
- Who was the **first ruler** to impose **Jajiya tax** in **India**? **- Mohammad Bin Qasim**
- Which practice was started by the **Arabs in Sindh**? **- Domestication of camels and cultivation of Dates**
- Who invaded **India** after **Arabs**? **- Turks**
- Who established **Ghaznavi dynasty** of **Turks**? **- Alaptagin Ghazni**
- Who was the **first Turkish** invader in **India**? **- Sabuktigin Ghazni**
- Which **Hindu King** was defeated by **Sabuktagin Ghazni** during his **north western** invasion of India? **- King Jayapal**
- Who was the **ruler of Gujarat**, when **Mahmud Ghaznavi** invaded **Somnath temple** in **1205 AD**? **- Bhima I**

Mahmud Ghaznavi invaded India **17 times** between **1000-1027 AD**. He was the **first Turkish ruler** to be known as **Sultan**. **Muhammad Ghori** was the **founder** of **Muslim regime** in India.

- Which **famous historian** accompanied **Mahmud Ghaznavi** in India? **- Al-Biruni**

The famous book **Kitab-ul hind** was written by **Al-Biruni**, **Kitab-ul-yamini** by **Abu Nasr Muhammad ibn Muhammad al Jabbaru-l Utbi** and **Shahnama** by **Firdausi** (Persian poet, known as Homer of the East).

- When did **Muhammad Ghori** invaded India? **- 1175 AD** (Multan)
- Who defeated **Muhammad Ghori** at **Anhilwara** (Patan) during his invasion in **1178 AD**? **- Bhima II** (Solanki)
- Between whom were the **first** and **second battle** of **Tarain fought**? **- Muhammad Ghori and Prithviraj III**

Battle of Tarain

Battle Number	**Year**	**Result**
First	1191	Mohammad Ghori defeated
Second	1192	Mohammad Ghori won

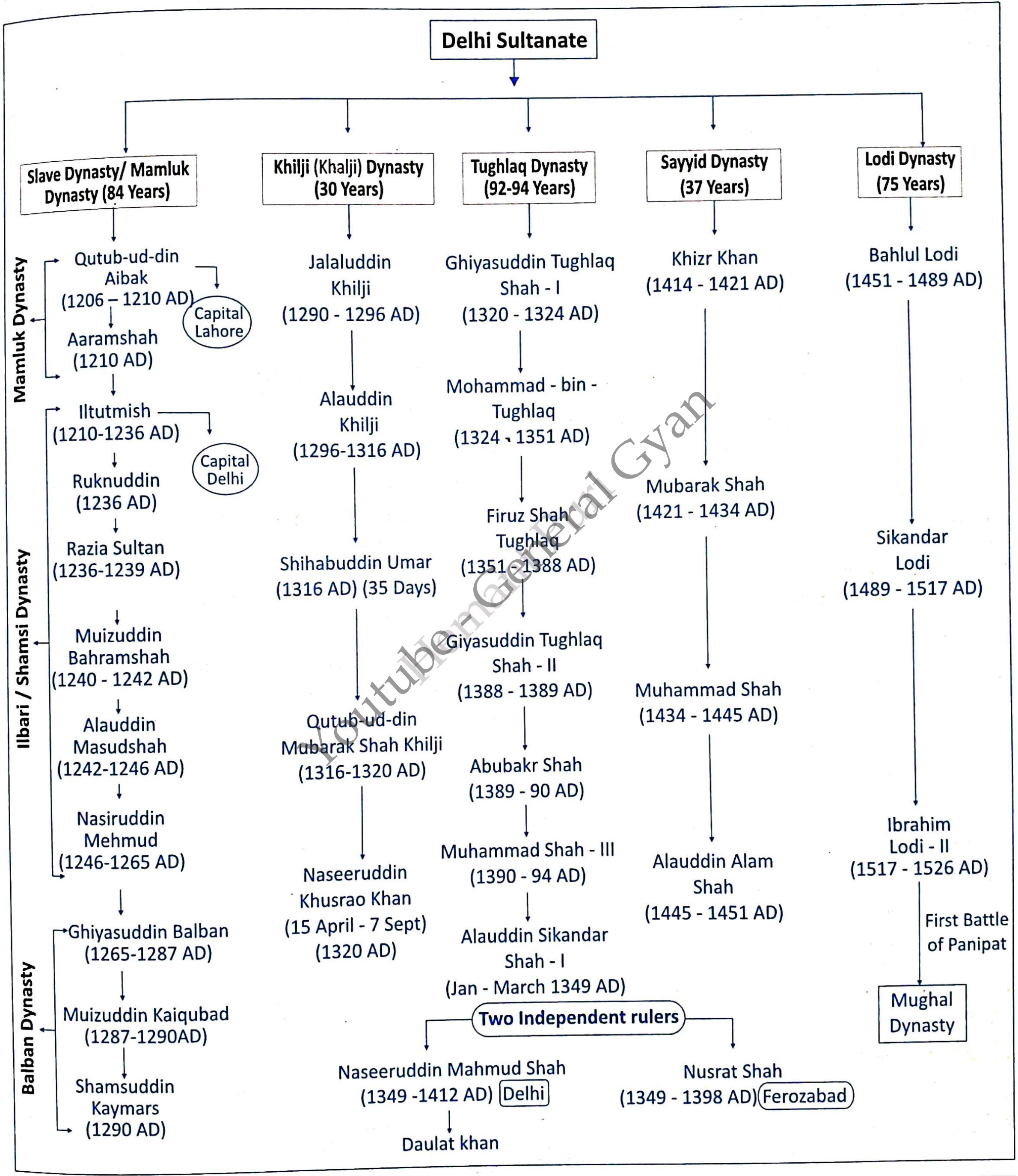
- In which battle did **Muhammad Ghori** defeated **Jayachanda**, the **king of Kannauj**? **- Battle of Chandawar** (1194 AD)
- Which **sufi saint** accompanied **Muhammad Ghori**? **- Sheikh Moinuiddin Chishti**
- Which **Muslim ruler** inscribed **Goddess Lakshmi** on his **coins**? **- Muhammad Ghori**

Bakhtiyar Khilji was a **slave** of **Muhammad Ghori**. He succeeded in conquering over **Bihar** and **Bengal** where he destroyed **Nalanda** and **Vikramshila Vishwavidayalaya**.

- Which **Three slaves** controlled the **kingdom** of **Muhammad Ghori** after his death? **- Taj-ud-Din Yalduz, Nasir-ud-Din Qabacha and Qutb-ud-din Aibak**

Alaptigin was the founder of **Ghaznavid empire** (962 AD), his son in law **Subuktagin** was the **first Turkish ruler** to attack India.

The Delhi Sultanate (1206-1526 AD)


Delhi Sultanate
Slave Dynasty/ Mamluk Dynasty (84 Years)
Mamluk Dynasty
Qutub-ud-din Aibak (1206 – 1210 AD)
Capital Lahore
Aaramshah (1210 AD)
Ilbari / Shamsi Dynasty
Iltutmish (1210-1236 AD)
Capital Delhi
Ruknuddin (1236 AD)
Razia Sultan (1236-1239 AD)
Muizuddin Bahramshah (1240 - 1242 AD)
Alauddin Masudshah (1242-1246 AD)
Nasiruddin Mehmud (1246-1265 AD)
Balban Dynasty
Ghiyasuddin Balban (1265-1287 AD)
Muizuddin Kaiqubad (1287-1290AD)
Shamsuddin Kaymars (1290 AD)
Khilji (Khalji) Dynasty (30 Years)
Jalaluddin Khilji (1290 - 1296 AD)
Alauddin Khilji (1296-1316 AD)
Shihabuddin Umar (1316 AD) (35 Days)
Qutub-ud-din Mubarak Shah Khilji (1316-1320 AD)
Naseeruddin Khusrao Khan (15 April - 7 Sept) (1320 AD)
Tughlaq Dynasty (92-94 Years)
Ghiyasuddin Tughlaq Shah - I (1320 - 1324 AD)
Mohammad - bin - Tughlaq (1324 - 1351 AD)
Firuz Shah Tughlaq (1351 - 1388 AD)
Giyasuddin Tughlaq Shah - II (1388 - 1389 AD)
Abubakr Shah (1389 - 90 AD)
Muhammad Shah - III (1390 - 94 AD)
Alauddin Sikandar Shah - I (Jan - March 1349 AD)
Two Independent rulers
Naseeruddin Mahmud Shah (1349 -1412 AD) Delhi
Daulat khan
Nusrat Shah (1349 - 1398 AD) Ferozabad
Sayyid Dynasty (37 Years)
Khizr Khan (1414 - 1421 AD)
Mubarak Shah (1421 - 1434 AD)
Muhammad Shah (1434 - 1445 AD)
Alauddin Alam Shah (1445 - 1451 AD)
Lodi Dynasty (75 Years)
Bahlul Lodi (1451 - 1489 AD)
Sikandar Lodi (1489 - 1517 AD)
Ibrahim Lodi - II (1517 - 1526 AD)
First Battle of Panipat
Mughal Dynasty

Qutubuddin Aibak, established **Qutbi dynasty** (1206-11); **Iltutmish** founded the first **Ilbari dynasty** (1211-66 AD) and **Balban** founded Second **Ilbari dynasty** (1266-1290 AD)

The Slave Dynasty/Mamluks (1206-1290 AD)

- Who established the **slave dynasty**?
  - **Qutb-ud-din Aibak**
- In which city was **Aibak** coronated in **1206 AD**? - **Lahore**
- What was the **capital** of **Qutb-ud-din Aibak**? - **Lahore**

Qutb-ud-din Aibak is considered as the **founder** of **Turkish rule** in **India**. He **never adopted** the title of **Emperor**. He called himself as **Malik** and **Sipaah Salar**.

- What title was given to **Qutb-ud-din Aibak** for his **kindness** and **generosity**? - **Lakhabaksh**
- What was the title given to **Aibak** for his proficiency in reading **Quran** in a melodious voice? - **Quran Khwan**
- Who established the **first mosque of India, Quwwat-ul Islam**? - **Qutb-ud-din Aibak**

Qutb-ud-din Aibak started the construction of **Qutub Minar** in the name of **Khwaja Qutbuddin Bakhtiyar Kaki**.

- When did **Qutb-ud-din Aibak** died?
  - **In 1210 while playing horse Polo** (Chaugan)
- Who succeeded after the death of **Qutb-ud-din Aibak** by displacing his son, **Aram Shah** from the throne? - **Iltutmish**
- Iltutmish was the **Governor** (subedar) of which place before becoming the ruler? - **Badaun** (U.P.)
- Who is considered as the actual founder of **Delhi Sultanate**? - **Iltutmish**

Iltutmish became the **first Emperor** to make **Delhi** as his **capital** and **adopt** the title of **Emperor** (Sultan) from the **Khalifa of Baghdad**.

- Which **Corp** was constitued by **Iltutmish** of his **40 loyal slaves/Amirs**? - **Turkan -e-chahalgani**
- **Caliph of Baghdad** conferred upon whom the title of **Sultan**? - **Iltutmish** (in 1229 AD)
- During whose rule did **Mongol invader Changez Khan** invaded **north western boundary** of India? - **Iltutmish**

Iltutmish started the **Ikta/Iqta system** in **India**. **Ikta** is an **Arabic** word which means **land and the person** who took the land was known as **iktadar/iqtadar**.

- Who was the **first** and the last **women Muslim ruler** to sit on the throne of **Delhi Sultanate** in **1236 AD**?
  - **Raziya Sultan** (1236-39)
- On what post was **Yaqut Khan** appointed after **Raziya** became the **sultan**? - **Amir-e-Akhur**
- Who was appointed the **Sultan** after the death of **Raziya** by **bandits**? - **Bahram Shah**

During the reign of **Bahram Shah**, a post of **Naib-e-mamlakat** was created who was the factors ruler.

- Which ruler appointed Balban on the post of **Naib-e-mamlakat**? - **Nasiruddin Mahmud**
- Who conferred the **title** of **Ulugh Khan** to **Balban**?
  - **Naseeruddin Mehmood**
- Who dissolved the **forty** or **chahalgani** after becoming the **sultan of Delhi**? - **Balban**
- Which **Delhi sultan** followed the **policy of Blood and iron** against his opponents? - **Balban**

Balban was the **first sultan** to propagate the **theory of Kingship**. He called **kingship** as **Niyabat-e-Khudai** (recipient of divine grace) and the king as **Zil-i-ilahi** (God's shadow on earth).

- Which sultan started the **ceremony of Sijada** and **Paibos** in his **court**? - **Balban**
- What was the name of **military department** set up by **Balban**? - **Diwan-i-arj**

Balban re-organised the army of **Delhi Sultanate** to counter **threat** of **Mongols** through **Diwan-i-Arz**.

- Who was the last ruler of **Slave dynasty**?
  - **Shamsuddin Kayumars**

Balban introduced the Persian festival **Nauroz**.

Nasiruddin Mahmud was the son of **Iltutmish**,was a man of calm behavior. He was called **Adam Sultan** by historian **Minhaj-i-Siraj**.

The Khalji Dynasty (1290-1320)

- Who was the founder of **Khalji dynasty** in 1290?
  - Jalaluddin Ferozshah Khalji
- Which Delhi sultanate ruler tried to mitigate the harsh aspects of **Balban's rule**?
  - Jalaluddin Ferozshah Khalji
- Who **killed Jalaluddin Khalji** at **Kara** (Manikpur) in **1296**?
  - Alauddin Khalji
- Which **Sultan of Delhi** laid the foundation of a **permanent standing army** and **Encashed Salary**?
  - Alauddin Khalji
- What measures were taken by **Alauddin** to curb **corruption** in his reign? **- Description of each soldier** (Chehra) **and Branding of horses** (Dagh) **System**
- Who was the **first Delhi Sultan** to impose **grazing tax** (Charai) and **home tax** (Ghari)? **- Alauddin Khalji**
- In whose tenure the **maximum number** of **Mongol attacks** took place? **- Alauddin Khalji**
- Which **Delhi Sultanate ruler** assumed the **title of caliph** himself? **- Mubarak Shah Khalji**
- Where was the **horse shoe shaped arch** used for the **first time**? **- Alai Darwaza**

Alauddin adopted the policy of **market control** to provide **commodities** at a **cheaper price** to his **soldiers**.

- Who gave **Amir Khusrau**, the title of **Tuti-i-Hind**?
  - Alauddin Khalji
- Who adopted the title of **Sikander-i-Sani** and **Alexander II** after his coronation? **- Alauddin Khalji**

Alauddin appointed **Barid-i-Mandi** (Intelligence officers) and **Munhiyans** (Sultan's secret agent).

- Which state was **first attacked** by **Alauddin** after he became the sultan? **- Rayakarna** (Gujarat)

Allauddin Khilji's South India Campaigns

State	Ruler	Leader	Year
Devagiri	Ramchandra Dev	Malik Kafur	1308 AD
Warangal	Pratap Rudr Dev	Malik Kafur	1310 AD
Dwarsamudra	Veer Ballal-III	Malik Kafur	1311 AD
Pandya	Veer Pandya	Malik Kafur	1311 AD

Malik Kafur, was a commander of **Alauddin** and one of his favorites was brought by **Nusrat Khan** in **1000 Dinars**. He was also called as **Hazaar dinari**.

- Who was the ruler of **Chittor** when **Alauddin** attacked it in **1303**? **- Raja Ratan Singh**
- Who was the **first Emperor** of **Delhi sultanate** to attack **southern India** after crossing **Vindhyas**?
  - Alauddin Khalji
- Who was the **commandar** (senapati) of **southern missions** of Alauddin? **- Malik Kafur**

Pratap Rudra Deva II, the **ruler of Warangal** (Telangana) gifted the **Kohinoor diamond** to **Malik Kafur** who gifted it to **Alauddin Khalji**.

- Which **southern state** was attacked first by **Malik Kafur**?
  - Devagiri

Allauddin's Market Control Officers

Department	Officers
Barid-i-mandi	Market Inspector
Shahna-i-mandi	Market Superintendent
Diwan-i-riyasat	Market Controller
Manhaiyan	Detective

Alauddin built **Jamait Khana Mosque, Alai Darwaza, Hauz Khas, Mahal Hazar Satoon** and **Alai Minar**. He constructed a new capital at **Siri**. Alauddin prohibited the **sale** and **use** of **liquor** and **intoxicants** in **Delhi** and **neighbouring** areas. He **forbade parties/gathering** of **nobles** without his permission. **Khuts** were a new **intermediaries** (Zamindars) at **Pargana/Shiq** level.

Khaljis' were of mixed **Turkish Afghan origin**. **Firoz** (a war minister of Kaymars) killed the last **Mamluk** emperor **Kaymars** and adopted the title of **Jalaluddin** and laid foundation of **Khalji empire**.

The Tughlaq Dynasty (1320-1414)

- Who was the **founder of Tughlaq dynasty**?
  - **Ghiyasuddin Tughlaq** (In 1320 AD)
- Which **Delhi sultanate ruler** is credited for the formation of **Canals** and **Postal system**?
  - **Ghiyasuddin Mohammad Tughlaq**
- With which **sufi saint, Ghiyasuddin Tughlaq** did not had good relations?
  - **Nizamuddin Auliya**

While returning from his **Bengal conquest, Ghiyasuddin Tughlaq** ordered that **Nizamuddin Auliya** should leave **Delhi** before he reaches **Delhi**. At which **Auliya** remarked **Delhi is still far** (Hanuz Dilli Dur Astha).

- Who was the **most literate/educated ruler** of **Delhi sultanate**?
  - **Mohammad Bin Tughlaq**

Major Works of Mohammad Bin Tuglaq

Plan	Speciality
Capital Change (1326-27 AD)	Tughlaq renamed **Devagiri** as **Daulatabad** and made it the capital of the Sultanate. In **1335 AD, Delhi** was again made the capital.
Tax Increment in Doab (1327-28 AD)	This scheme also failed, because the public could not pay **taxes** due to **famine** at that time.
Nominal Currency Circulation (1330 AD)	A **bronze coin** as a **token currency** was introduced replacing **silver tanka**, which was later withdrawn.
Khorasan Expedition (1336-37 AD)	To conquer **Khurasan**, Tughlaq formed **3 lakh 70 thousand soldiers** and gave them **1 year advance salary**.
Karachil Expedition (1337-38 AD)	Tughlaq sent **1 lakh soldiers** under the leadership of **Khusro Malik**, but the expedition failed due to **bad weather conditions**.

- Which **Delhi Sultan** established the **department** of **Diwan-amir-i-kohi** related to agriculture?
  - **Mohammad Bin Tughlaq**
- Who is credited with issuing **Token currency** for the **first time**?
  - **Mohammad Bin Tughlaq**
- During whose tenure did **Moroccan traveller Ibn Battuta** visited?
  - **Mohammad Bin Tughlaq** (1333 AD)
- Who is the **author** of the book **Rehla**?
  - **Ibn Batutta**

During the reign of **Mohammad Bin Tughlaq, Harihara** and **Bukka** established the **Vijayanagara empire** in **1336** and **Hasan Gangu** established **Bahamani empire** in **1347**.

- Who was the **first Delhi sultan** to participate in the **public festival** of **Holi**?
  - **Mohammad Bin Tughlaq**
- With which **Jain saint** did **Mohammad Bin Tughlaq** had close relations?
  - **Jinaprabha Suri**
- In which mission did **Mohammad Bin Tughlaq** died?
  - **Sindh mission** (1351 AD)
- Which ruler established the **Public Works Department** for the **first** time?
  - **Firuz Shah Tughlaq**
- Which Delhi sultan brought the **Ashokan rock pillar inscription** of **Topra and Meerut** to **Delhi**?
  - **Firuz Shah Tughlaq**
- In the court of which sultan were **maximum number of slaves** kept?
  - **Firuz Shah Tughlaq**
- Who was the **first Muslim ruler** to **impose Jizyah tax** on **Brahmans**?
  - **Firuz Shah Tughlaq**
- Which **Delhi sultan** levied the **irrigation tax** called as **Haq-e-Sharb**?
  - **Firuz Shah Tughlaq**

Departments established by Firoz Shah

Diwan-i-Bandagan	To look after slaves
Diwan-i-Istihaq	For pension
Diwan-i-Khairat	Department of Charity
Dar-ul-Shafa	Marriage Bureau for poor Muslims

Firuz Shah Tughlaq founded the towns of **Jaunpur, Fatehabad, Hissar, Firuzpur** and **Firuzabad**. He patronised **Barani** and **Afif**. He introduced **two new coins- Adha** (50% Jital) and **Bitch** (23% Jital). He took works of **public utility** (like canals) and was known as **lover of Gardens**.

- Who was the **last ruler** of **Tughlaq dynasty**?
  - **Nasiruddin Mahmud**

Taimur/Timur, an invader from **Central Asia** attacked **India** during the reign of **Nasiruddin Mahmud** (1398 AD).

History of Modern India

Arrival of Europeans in India

- Who were the **first Europeans** who came to India through sea routes? - **Portuguese**
- Who discovered the sea route from **Europe to India**? - **Vasco da gama** (arrival on 15th May, 1498)
- Who welcomed **Vasco da gama** at **Calicut port**? - **Zamorin** (Local king)
- Where did **Portugese** establish **first commercial building** in **India**? - **Cochin**
- Who was made **first viceroy of Portuguese colonies** in **India**? - **Francisco de Almeida**

Credit for **cultivation of tobacco** and **printing press** goes to **Portuguese**. They are also credited with crops like **tomato, chillies, cashewnuts. First printing press** was established in **Goa** in **1556 A.D**.

- Who started **Blue Water Policy** to control commercial activity in **Indian Ocean**? - **Franscisco de Almeida**

Explorers/Discoverers of Countries

Explorers	Discovered Country
◆ Vasco da Gama	India (Route to India)
◆ Columbus	America
◆ Captain James Cook	Australia
◆ Tasman	Tasmania & New Zealand
◆ Bartholomeu Dias	Cape of Good Hope (South Africa)

- Who is known as the real founder of **Portuguese power** in **India**? - **Alfonso de Albuquerque**
- In which **viceroy's tenure Goa** was made **temporary capital** of **Portuguese**? - **Nino Da Cunha**

Portuguese started **Cartes-armada-caravan system** to control commercial activity in **Indian Ocean**. by providing safty to merchant ships.

- **Dutch** came to India after **Portuguese to trade**, they belonged to? - **Holland** (present Netherland)

Establishment of European Companies

S. No.	Company	Country	Year of Formation	Headquarters
1.	Portuguese East India Comp. (Companhia da India Oriental)	Portugal	1628	Calicut (Kerala)
2.	English East India Company (The Governor and Company of Merchants of London trading in the East Indies)	Britain	1600	Surat (Gujarat)
3.	Dutch East India Comp. (Verenigde Oostindische Compagnie)	Netherlands (Holland)	1602	Batavia (Indonesia)
4.	Danish East India Company	Denmark	1616	Sutanuti (Bengal)
5.	French East India Company (Compagnie des Indes Orientales)	France	1664	Surat (Gujarat)
6.	Swedish East India Company	Sweden	1731	Gothenberg (Sweden)

Among **Europeans**, **Portuguese** were **First to come India** (1498 A.D) and **last to leave** (1948).

Youtuber General Gyan

- Which **European power** gave **priority to import** of **garments instead** of **spices**? **- Dutch**
- Which **European powers** fought **Battle of Bedhra** against **each other**? **- Dutch and English**
- Who was the **King of India** when **British East India company** was formed in **England**? **- Akbar**
- Who was the British resident and ambassador of **James I** who came to the court of **Jahangir** to take permission for establishment of a commercial building? **- Captain Hawking** (1608 A.D)
- Which governor of **East India company** was exiled by **Aurangzeb**? **- Sir John Child**
- Which **Mughal king** granted right to **East India company** after successful treatment by **Hamilton**? **- Faruksiyar**

King of England Charles II got married to **Portuguese princess Catherine of Braganza** in **1661 A.D.**

- Which area was used for **Portuguese** for obtaining **Shora and Opium**? **- Bihar**
- Whom efforts made to established **French** in **1664 A.D**? **- Colbert**
- During whose tenure was the **French company** established? **- Louis XIV**
- Where was the first **French company** was established by **Frank Caron**? **- Surat** (1667A.D)

Portuguese Governor Dupleix was the **first European** who initiated **Policy of Intervening** in **internal affairs** and rivalries of **Indian kings** for acquiring territories.

- Where **Fort Louis** was constructed by **French**? **- Pondicherry**
- Who was the **first French governor** of **Pondicherry**? **- Franko Martin**

Founders of Prominent Cities

City	Founder
♦ **Calcutta**	Job Charnock
♦ **Madras**	Francies Dey
♦ **New Delhi**	Edwin Lutyens
♦ **Bombay**	Gerald Angiyar

- Which **English officer** defeated **Portuguese** at **Sowlley**? **- Thomas Best**
- Who was defeated by **English** in **Battle** of **Wandiwash** (1760A.D)? **- French**
- Who fought **Battle of Karnataka** against eachother? **- French and English**
- Which treaty ended **first Battle of Karnataka**? **- Treaty of Aix-la-Chapelle** (1748)

Important Events of the British Imperialist Phase in India

♦ **1600**	The East India Company was established.
♦ **1608**	Arrival of William Hawkins at Jahangir's court.
♦ **1612**	The first fortified English factory was established at Surat.
♦ **1616**	The English East India Company established their second factory at Masulipatam (first factory in South India).
♦ **1633**	The Company established a factory at Hariharpur, Balasore (Orissa) to be the first in Eastern India.
♦ **1662**	Charles II (British King) received the Island of Bombay in dowry for marrying the Portuguese princess (Catherine of Braganza).
♦ **1687**	English East India Company replaced it's headquarters from Surat to Bombay.

Carnatic Wars

Chronology	Causes	Treaties	Result
♦ **First** (1746-48)	War of Austria's Successor	Treaty of Aix La Chapelle	Undecisive
♦ **Second** (1751-55)	War of Carnatic's Successor	Treaty of Pondicherry (1755)	Britain Strengthened
♦ **Third** (1758-63)	Seven Years Wars (Britain - France)	Treaty of Paris	Defeat of France

British established **first temporary factory** at **Masaulipatnam** and **first permanent factory** at **Surat**.

Emergence of East India Company

- Who was the **last governor of Bengal** to be appointed independently by the **Mughal emperor**?
  - Murshid Quli Khan (1717-1727)
- Where did **Murshid Quli Khan** transferred his **capital from Dhaka**? **- Murshidabad**
- Which **governor of Bengal** compared the **English** with **honey bees**? **- Alivardi Khan**
- During the tenure of which **Nawab** did the event of **Black hole** happened on **20 June, 1756**?
  - Siraj-ud-Daula
- Between which two parties was the **Treaty of Alinagar** signed?
  - Lord Clive and Siraj-ud-Daula (Feburary 09, 1957)

Robert Clive was instrumental in laying the **foundation** of **British power** in **India** when he **defeated Siraj-ud-Daula** in the **Battle of Plassey** on **23 June, 1757.**

- Who was the **commander of Bengal** who betrayed the **Nawab** in the **Battle of Plassey**? **- Mir Jafar**
- Who was the **Mughal emperor** during the **Battle of Plassey**? **- Alamgir II** (Aziz-ud-din)
- Who became the **Nawab of Bengal** after the **Battle of Plassey**? **- Mir Jafar**
- Which battle proved determinant/conclusive in establishing **British dominance** in **India**?
  - Battle of Plassey (23 June, 1757)

Important Incidents and Dates

Incidents	Year
◆ **Black Hole**	20 June, 1756
◆ **Treaty of Alinagar**	9 February, 1757
◆ **Battle of Plassey**	23 June, 1757
◆ **Battle of Buxar**	22 October, 1764
◆ **First Treaty of Allahabad**	12 August, 1765
◆ **Second Treaty of Allahabad**	16 August, 1765
◆ **Treaty of Benaras**	1773

- Who was made the **Nawab of Bengal** after removing **Mir Jafar** in **1760**? **- Mir Kasim**

The combined armies of **Mir Kasim**, the **Nawab of Awadh** and **Shah Alam II** were defeated by the **English forces** under **Major Hector Munro** at **Buxar** on **22 October, 1764**. The importance of this battle lay in the fact that not only the **Nawab of Bengal** but also the **Mughal emperor** of **India** was defeated by the **British**.

- Who was the commander of the **British forces** during the **Battle of Buxar**? **- Major Hector Munro**
- Who was the **Nawab of Bengal** during the **Battle of Buxar**? **- Mir Kasim**

Robert Clive concluded two important treaties at **Allahabad** in **August 1765**- one with the **Nawab of Awadh** and the other with the **Mughal emperor Shah Alam II.** Mir Kasim, the dethroned **Nawab of Bengal**, spent the rest of his life in abject misery as a **homeless wanderer** and died unknown in **June 1777.**

- Through which treaty did the Britishers got the **Diwani rights of Bengal, Bihar and Orissa**? **- Treaty of Allahabad** (1765)
- Which **Governor** was known to have emerged from the **heaven**? **- Robert Clive**
- Who established **dual government in Bengal** during 1765-72)? **- Robert Clive**

Founders of New States

State	Tenure	Founder
Bengal	1719-20	Murshid Quli Khan
Hyderabad	1724	Nizam-ul-Mulk (Chin-Qulich Khan)
Bharatpur	18th century	Churaman Jat, Badan Singh
Carnatic (Arcot)	18th century	Zulfiqar Khan (first Nawab) Saadatulla Khan
Awadh (Oudh)	1722-24	Sa'adat Khan (Burhan-ul-Mulk)
Jaipur (Amber)	18th century	Sawai Raja Jai Singh
Rohillas and Bangash Pathans	18th century	Muhammad Ali Khan Muhammad Bangash
Mysore	18th century	Hyder Ali

Lord Lawrence (1864-69) initiated the **policy of Masterly inactivity**, while **Lord Lytton** (1876-80) is credited with **forward policy** (towards Afganistan).

Regional States : Punjab and Mysore

- Who is considered as the **founder of Sikh Empire?**
  - Maharaja Ranjit Singh (1799 AD)
- From which **misl** was **Maharaja Ranjit Singh** related?
  - Sukarchakiya misl
- What was the capital of **Maharaja Ranjit Singh?**
  - Lahore
- Who gave the famous **Kohinoor diamond** to **Maharaja Ranjit Singh?** **- Shah Shuja**
- Between whom was the **Treaty of Amritsar** signed on **25 April, 1809?**
  - Maharaja Ranjit Singh and British

> **Maharaja Ranjit Singh** was a **secular leader** who said that **God wanted me to see all the religions equally and therefore he took my power to see from the other eye.**

- Who was the **Governor General** of India during the **first Anglo-Sikh War** (1845-46)? **- Lord Hardinge**
- Which treaty was signed at the end of the **first Anglo-Sikh War?** **- Treaty of Lahore** (1846)
- Who was the heir of **Maharaja Ranjit Singh?**
  - Kharak Singh

Important Treaties	
♦ Treaty of Purandar I	1665
♦ Treaty of Badgaon	1779
♦ Treaty of Salbai	1782
♦ Treaty of Deogaon	1803
♦ Treaty of Surji-Anjangaon Village	1803
♦ Treaty of Poona	1817
♦ Treaty of Lahore	1806
♦ Treaty of Amritsar	1809

- Who was the **Governor General** at the time of **Second Anglo-Sikh war** (1848-49)? **- Lord Dalhousie**
- Who was the leader of the British forces at the **Battle of Chillianwallah** on **13 January, 1849? - Sir Hugh Gough**
- Who was the **last ruler** of Sikhs? **- Dalip Singh**
- Who was the **Governor General KFC India** when **Punjab** was consolidated in the **British Empire?**
  - Lord Dalhousie
- Who established the independent state of **Mysore?**
  - Hyder/Haidar Ali

Anglo Mysore Wars

War (Year)	Mysore King	Governor of Bengal	Treaty	Specifications
♦ **First Anglo Mysore War** (1767-69)	Hyder Ali	Lord Verelst	Treaty of Madras (1769)	Hyder Ali was the first South Indian ruler who remain **undefeated** by British
♦ **First Anglo Mysore War** (1780-84)	Hyder Ali	Warren Hastings	Treaty of Manglore	Tipu Sultan led the war against the British after death of Hyder Ali
♦ **Third Anglo Mysore War** (1790-92)	Tipu Sultan	Lord Cornwallis	Treaty of Srirangapatnam	Tipu Sultan's position weakened
♦ **Fourth Anglo Mysore War** (1799)	Tipu Sultan	Lord Wellesly	Treaty of Mysore	Death of Tipu Sultan Wadeyar dynasty re-established at Mysore **Treaty of Alliance** between **British Wodeyar dynasty**

French traveller Victor Jakma compared **Maharaja Ranjit Singh** to **Napoleon**.